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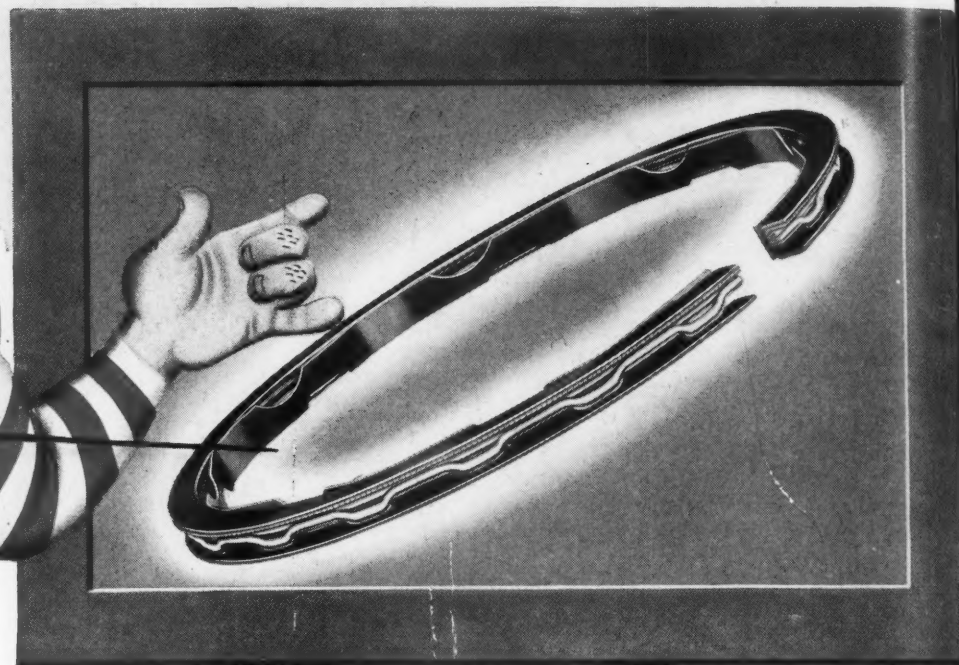
MOTOR AGE



NOVEMBER 1948

A CHILTON PUBLICATION

IT'S A "WET" RING!
IT REALLY CONTROLS OIL!
IT CAN'T CLOG!



STEEL-VENT IS THE RIGHT RING FOR EVERY JOB
—RE-RING OR REBORE!

- Steel-Vent's greater surface area helps give it greater oil-carrying capacity. It delivers this extra oil freely to the cylinder walls to provide generous wall lubrication all the way up.
- Steel-Vent keeps oil always under control with patented features that give it high unit pressure with lower total tension. Ample drainage capacity easily handles the extra oil.
- Steel-Vent's side-opening spacer operates against a moving segment with a "breathing" action that breaks up and flushes away clogging particles of carbon and gum.

★ ★ ★

These are three important reasons why Steel-Vent means longer service life in any job—re-ring or rebore.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
HASTINGS LTD., TORONTO
U. S. PAT. 2,148,997

TOUGH BUT ON SO GENTLE



HASTINGS

STEEL-VENT PISTON RINGS

TOUGH on Oil-Pumping
GENTLE on Cylinder Walls



Before
YOU TUNE-UP MECHANICALLY
... TUNE-UP CHEMICALLY!

Before you tune-up an engine, make sure it is "Chemically Clean". Just add Permatex Toon-Oyl to crankcase oil, warm up engine and let it idle. Sludge and carbon-gum binders that interfere with the smooth operation of valves, piston rings, oil lines and oil screens, will be loosened, disbursed and dissolved!

Then, you'll have a "Chemically Clean" engine, ready for your accurate mechanical adjustments!

R_x

ADD 1 QUART OF
PERMATEX
TOON-OYL TO 5
OR 6 QUARTS OF
ANY TYPE OF
MOTOR OIL IN THE
CRANKCASE

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

PERFORMANCE GOES UP IN SMOKE...

"It isn't the 7:15,
AL-

... IT'S A CAR THAT NEEDS
**FEDERAL-MOGUL
ENGINE BEARINGS**"



**WORN CONNECTING ROD
BEARINGS CAUSE OIL PUMPING**

You're on the right track when you make it a regular practice to check the bearings every time an engine is opened up for rings or overhaul. Worn bearings let excess oil reach the combustion chambers where it burns to carbon, fouling the pistons, rings, valves and spark plugs causing sluggish costly operation. When you replace with Genuine Federal-Mogul Oil-Control Bearings you know you are restoring power, pep and economy. **FEDERAL-MOGUL SERVICE**, Division of Federal-Mogul Corporation, Coldwater, Michigan.

Replace in Sets with Genuine
FEDERAL-MOGUL
Oil-Control Bearings



*The Complete Line—
Almost 7,000 numbers:*

Engine Bearings • Bushings •
Connecting Rod Exchange • Re-
conditioned Connecting Rods •
Rebabbitted Connecting Rods
• Connecting Rod Bolts and
Nuts • V-seam Piston Pin Bush-
ings • Bearing Metals • Lam-
inated Shims • Solders.



Shorter days mean more night driving... more hazards. At this time of the year, drivers can't be too careful about proper road illumination.

You can develop extra business, as well as customer good-will by installing Blue Streak headlight relays. They result in 30% more road illumination even when used in a brand new car, and add as much as 100% greater

lighting efficiency in older numbers... without drawing a fraction of an amp of extra current.

This headlight relay is a famous Blue Streak "first", developed in our own laboratories. For precision and efficiency, it has never been topped.

Your jobber has Blue Streak Single and Dual Headlight Relays. Put in a supply the next time you order!

better your business... buy Blue Streak

STANDARD MOTOR PRODUCTS, INC., LONG ISLAND CITY 1, NEW YORK

MOTOR AGE, November, 1948

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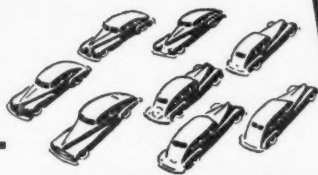
MOTOR AGE, Vol. LXVII, No. 12. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries, \$3.00 per year. Canadian and foreign, \$5.00 per year; single copies, 40 cents.

why

IT PAYS TO BUY FROM A McQUAY-NORRIS WHOLESALER

1

THE McQUAY-NORRIS WHOLESALER
STOCKS PARTS FOR ALL CARS . . .
ALL AGES . . . COMPETITIVE PRICES.



2

THE McQUAY-NORRIS WHOLESALER
HAS ONE-STOP, ECONOMICAL SERV-
ICE . . . LARGE INVENTORIES.



3

THE McQUAY-NORRIS WHOLESALER
OFFERS MACHINE-SHOP SERVICE.



4

THE McQUAY-NORRIS WHOLESALER
GIVES INTERESTED PERSONAL AT-
TENTION.



5

THE McQUAY-NORRIS WHOLE-
SALER'S ONLY JOB IS SERVING
YOU.



GUARANTEED
TO DO ALL **4**

- 1** Keep oil down
- 2** Keep power up
- 3** Give smooth,
new motor operation
- 4** Give longer life

And...



**McQUAY-NORRIS WHOLESALE SELL
FAMOUS LEAK-PROOF PISTON RINGS**



Under the noses of 10,300,000 ad-reading Americans!

And that's just this month! This hard-hitting national advertising is telling plug users about the merits of AC's patented insulator. Aimed at all types of vehicle owners, from motorists to bus and truck operators, it has substantially increased the demand for AC Spark Plugs in all territories. Are you getting your share?

SATURDAY EVENING POST

POPULAR SCIENCE

FARM JOURNAL

SUCCESSFUL FARMING

SOUTHERN AGRICULTURIST



Spark Plugs

BE A NATIONAL ADVERTISER



DISPLAY THIS SIGN

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION

AN EASY WAY TO SELL AIRTEX FUEL PUMPS

Test 'em... Show 'em... SELL 'em!

WITH THE
AIRTEX
Handi
FUEL PUMP TESTER

It's YOURS AT NO COST!

Yes, here's the way to increase your fuel pump business! Just use this handy Airtex Tester to analyze the fuel pump in every car that stops in for gas or oil, a grease job or tune-up. Tester shows exact condition of pump . . . and you show your customer! Experience proves that nothing sells a repair job—or a new pump—faster than this brief demonstration! Get your Airtex Handi Fuel Pump Tester today!

Valuable Airtex Fuel Pump Tester shows whether fuel pump meets pressure, vacuum and capacity limitations for efficient engine operation. Over or under pressure as well as irregular fuel flow may denote:

- WORN OR LEAKING DIAPHRAGM
- WORN ROCKER ARM, LINKS, PULL ROD, VALVES OR VALVE SEATS
- CLOGGED FUEL LINE
- WORN OR WEAK DIAPHRAGM SPRINGS
- DIRT OR GUM ON VALVE SEAT



Complete with fittings and instructions for testing fuel pumps on all cars and trucks.



Equipped with "Airtex"—the 50,000 Mile Guaranteed Diaphragm.

Get your AIRTEX Handi FUEL PUMP TESTER with the purchase of each of these Special Airtex "Deals"

AIRTEX "Deal" AX15

- 12** Most popular single-type Airtex Fuel Pumps with attractive metal display rack and sign.
- 2** Airtex Gasoline Filters with Pulsation-DAMPER individually packaged with fittings.

TOTAL LIST PRICE — \$75.00 YOUR REGULAR PRICE — \$46.50

Special Introductory Price—\$37.50

YOUR PROFIT—\$37.50

AIRTEX "Deal" AX30

- 12** Most popular single-type Airtex Fuel Pumps with attractive metal display rack and sign.
- 3** Airtex Combination Fuel and Vacuum Pumps.
- 4** Airtex Gasoline Filters with Pulsation-DAMPER individually packaged with fittings.

TOTAL LIST PRICE—\$120.20 YOUR REGULAR PRICE—\$73.62

Special Introductory Price—\$59.90

YOUR PROFIT—\$60.30



Colorful 16 1/2" x 14 1/2" Sign included with each deal. Invites car owner to have on-the-spot fuel pump test.

ORDER FROM YOUR JOBBER TODAY!

AIRTEX AUTOMOTIVE DIVISION
Chefford Master Mfg. Co., Inc. FAIRFIELD, ILLINOIS

DELCO BATTERIES



**MANUFACTURERS'
CHOICE FOR
ORIGINAL
EQUIPMENT . . .**

**YOUR
CHOICE FOR
REPLACEMENT**

**A COMPLETE
LINE WITH
COMPLETE
ACCEPTANCE**



**DELCO BATTERIES—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS**

Delco-Remy offers a complete line of Delco Batteries for replacement sales. Delco Batteries are *original-equipment* on all General Motors cars and trucks. No other battery is backed by such a record of performance and dependability in so many cars for so many years! Take advantage of the sales opportunities in the complete line of nationally advertised Delco batteries.

DELCO-REMY

DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN



SAVE TIME...
MAKE MORE MONEY

WAGNER LOCKHEED

HYDRAULIC BRAKE

REPAIR KIT MERCHANDISER

**BUILDS
SALES!**

**Handy stock helps build up,
speed up brake repair business**

You can build up and speed up your brake repair business by having a representative assortment of brake repair kits instantly available from this attractive *all metal* merchandiser.

Cabinet contains a representative assortment of wheel cylinder and master cylinder repair kits providing wide coverage of most makes and models of passenger cars and light trucks.

Wagner repair parts are manufactured to original equipment specifications, assuring perfect fit and dependable performance, and come to you in factory-sealed kits for maximum protection to you and your customers.

Wagner Electric Corporation

6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.



H48-10



FL-405A
Complete with 57
Kits and Cabinet



EVERY REPAIRMAN NEEDS

Bulletins HU-17G and HU-197... Tips
for better Brake Service—free on request

**LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRoL
CoMaX BRAKE LINING • AIR BRAKES • TACHOGRAPHS
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES**

SEE WAGNER PRODUCTS AT BOOTHS D118, 120, 122, 124 A. S. I. SHOW



Andrews MERCHANDISERS

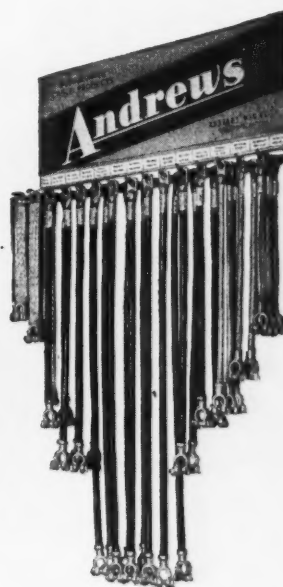
TO INCREASE SALES VOLUME

The complete line of Andrews Automotive Cable and Electrical Products - packaged profits - coils, voltage regulators, switches, cutouts, condensers, brushes, contacts, etc., with sales-maker merchandisers, will increase your sales volume.

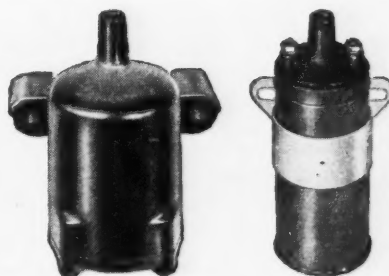
Customer Satisfaction Since 1921



Andrews
MANUFACTURING CO.
ST. LOUIS, MO.



SEE THE
NEW
ANDREWS
LINE
OF
COILS





I was SPEECHLESS in all ways but one!

... says John

Reading time:
1 minute, 55 seconds

1

"When I walked down that gangplank forty years ago I couldn't speak a word of English. I had no friends and little money,—nothing but a bag of tools, a pair of hands and tears in my eyes from seeing the Statue of Liberty.

"I slept that first night in a flop house where one of my countrymen told me to go. I went out next morning to explore a little,—came back that night with stars in my eyes and a song in my heart,—What a Country!



3

back to the Statue of Liberty, the flop house, and to the good-natured Mick who gave me my first job.

"After about seven years of working on cars and trucks I learned to speak English, and read it too. When I took out my final citizen's papers they told me I knew more about my adopted country than many a native American. People used to call me 'Happy John.' How could anyone help being happy in such a country?

"A lot of water has gone over Niagara Falls since those days. I hardly recognize myself as that tongue-tied immigrant of forty years ago. Here I am now owning a lovely home in California and the finest Chrysler-Plymouth dealership on the whole Pacific Coast.

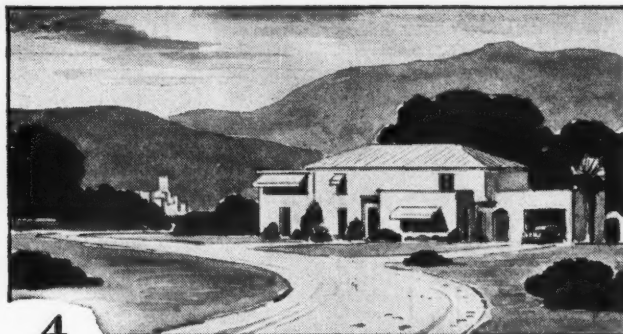
"If you ask me how I got that way I'd say it was a lot of things. It was all those years, it was this great kind-hearted country, and it was the new era of motor vehicles that seemed to arrive just about when I did. I moved up from fixing cars to selling them. I still do both as well as ever.

2



"The job I got was in a big rickety garage where I opened up my bag of tools, made motions with my hands, and convinced the boss I could fix any kind of machinery. The boss was a big Irishman and all he said was, 'Go ahead and do your talking with them tools.'

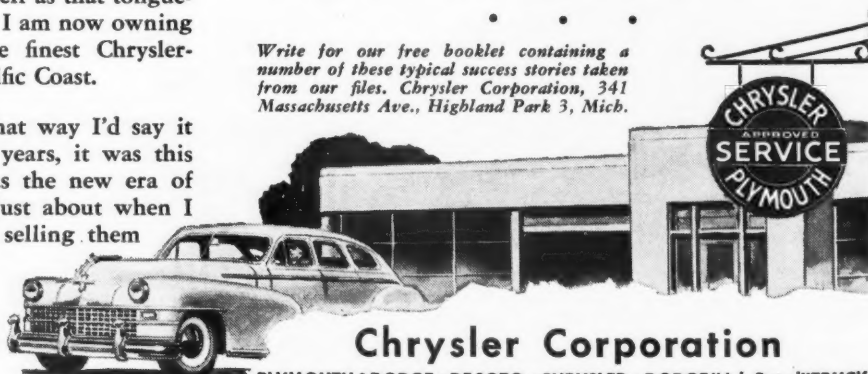
"Nowadays, whenever I get real sentimental I get out those old tools and spread 'em on the floor. They take me back to when I was an apprentice in Europe,



4

"I've got grown up kids now and grandchildren to boot. Whenever I get the chance I always tell them—'Let your work speak for itself and folks will understand you.' I also tell 'em, 'If it ever happens you kids don't like the way things are in this country, go out and fight and vote for a change,—like true Americans.'"

Write for our free booklet containing a number of these typical success stories taken from our files. Chrysler Corporation, 341 Massachusetts Ave., Highland Park 3, Mich.



Chrysler Corporation

PLYMOUTH • DODGE • DESOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS



CUSTOMERS expect more power and better performance after a motor tune-up—that's what they pay for. Don't disappoint them . . . as part of your tune-up service, set the timing to take *full advantage* of the high antiknock quality of "Ethyl" gasoline. Give your customers all the power and performance their cars can deliver. Ethyl Corporation, New York 17, N.Y. — manufacturer of antiknock fluid used by oil companies to improve gasoline.



25 years' service to America's progressive petroleum industry

Products sold under the "ETHYL" trade-mark — Antiknock Compound . . . Salt Cake . . . Ethylene Dichloride . . . Sodium Metallic . . . Chlorine (liquid) . . . Oil Soluble Dye





Tune in "Suspense", the Auto-
Lite Radio Show — Thursdays
9:00 P.M., E.T. on C.B.S.





Signs of authority...



● The referee wins authority because he represents the strength of every loyal supporter of the game, players and fans alike. And each of the 10,500,000 Auto-Lite users makes the display of Auto-Lite signs important to you. Because more than half of America's car manufacturers specify Auto-Lite parts as original factory equipment, your identifying yourself with Auto-Lite makes you the logical choice of Auto-Lite's big ready-made market . . . stamps you as an authority on service and a reliable source of original factory parts. Write for complete details.

THE ELECTRIC AUTO-LITE COMPANY

Parts and Service Division

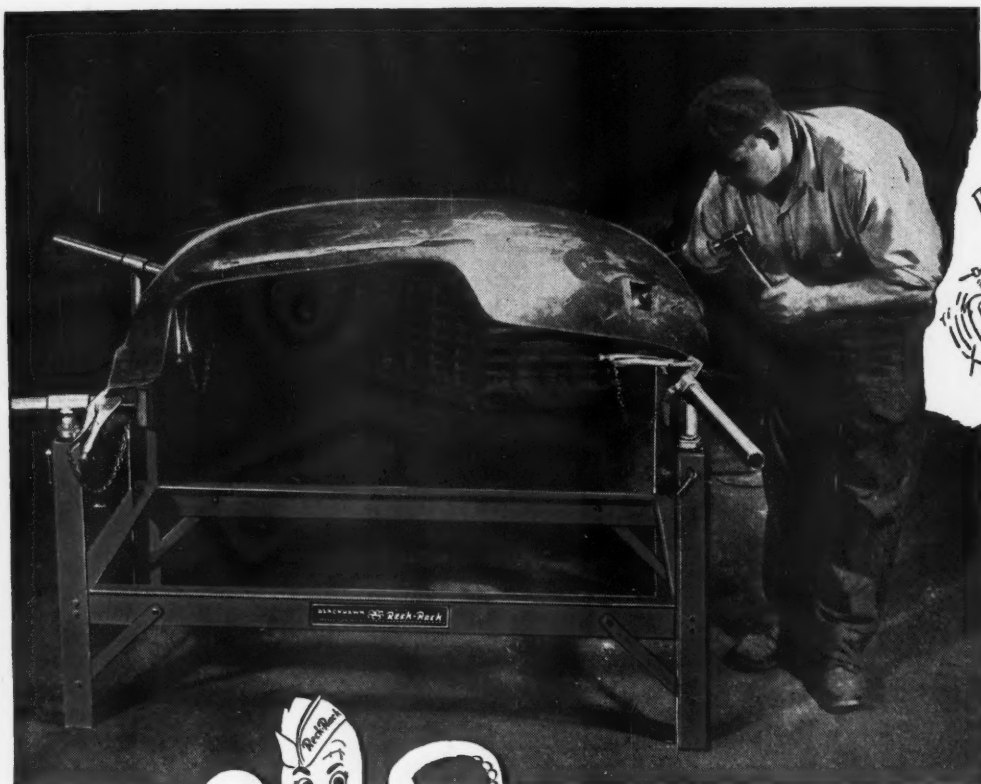
Sarnia, Ontario

Toledo 1, Ohio

AUTO-LITE

*Money cannot buy better Automotive
Electrical Equipment*





Hold 'er Knute,
she's
a rarin'!



lets you work instead of wrestle

Blackhawk Reck-Rack gives body men a break. It's the answer to a body department's dilemma of how to properly hold cumbersome body sections, particularly on new postwar cars. As versatile as an octopus, Reck-Rack rigidly holds any size or shape of body section in any position. It speeds body work, makes it easier and more convenient. Ask your Blackhawk Jobber about Blackhawk Reck-Rack now. Say goodbye to special jigs and haphazard holding methods.

A Product of
BLACKHAWK MFG. COMPANY, Dept. J-6118, Milwaukee 1, Wisconsin

- DOORS
- LIDS
- HOODS
- FENDERS
- GRILLES
- BODY PANELS

RECK - RACK ELIMINATES SPECIAL JIGS



CLAMPING



GALLOPING HORSES



DRAWERS



TABLES

RECK - RACK SAVES TIME ON JOBS LIKE THESE



STRAIGHTENING



HAMMERING



SANDING



DOLLYING

Another Money-Saving
Addition to the Famous
Porto-Power Line

HAND JACKS

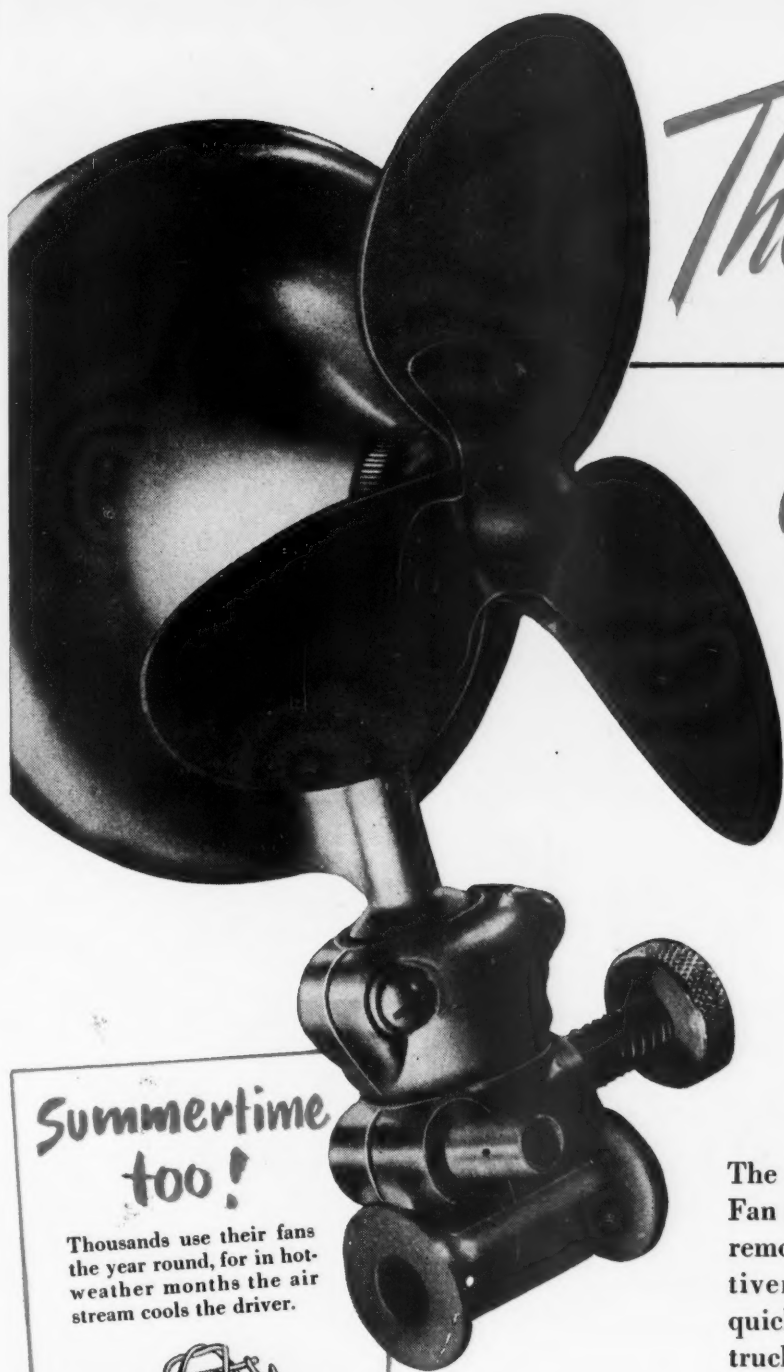
BLACKHAWK

SERVICE JACKS

PORTO-POWER EQUIPMENT

Leader in the Creation
of Practical New
Service Equipment

SOCKET WRENCHES



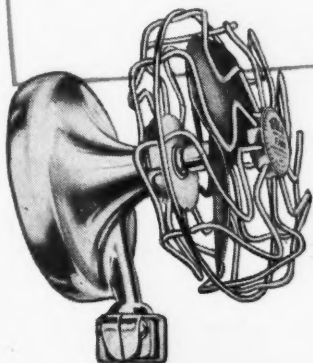
The fastest **DEFROSTER** *of them all*

**...and it's easy
to sell**

...easy to install

**Summertime
too!**

Thousands use their fans
the year round, for in hot-
weather months the air
stream cools the driver.



*Cage-type, Trico Fans are
equally effective for those
who prefer metal blades
instead of flexible rubber.*

The blast from a Trico vacuum-operated Fan is the fastest frost, "steam" and sleet remover of them all. It doubles the effectiveness of built-in defrosters...and quickly clears windshields on cars and trucks not so equipped.

Trico is the one fan which puts no drain on the battery...requires no electric wiring ...costs nothing to operate. Universal attachment bracket fits instrument panel, header panel or steering column.



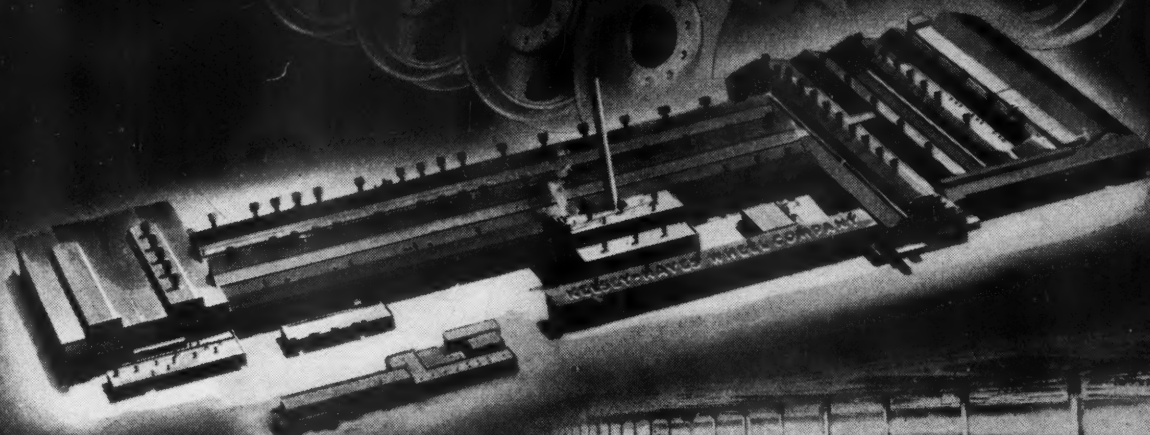
Windshield Fans

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.

KELSEY-HAYES

Monroe, Michigan Plant

*World Famous
source of WHEELS!*



One of 8 Great Plants Specializing in Superior Automotive Products

Kelsey-Hayes' Monroe plant concentrates on the production of wheels. From the beginning of the automotive industry, Kelsey-Hayes has led in the design and engineering development of wheels of proven quality for passenger cars, trucks, tractors, buses and farm implements. Kelsey-Hayes wheels, recognized for their superior performance throughout the world for both original equipment and change-over requirements, can serve you better. See your "K-H" representative.



ASSURES PROVEN PRODUCTS AT

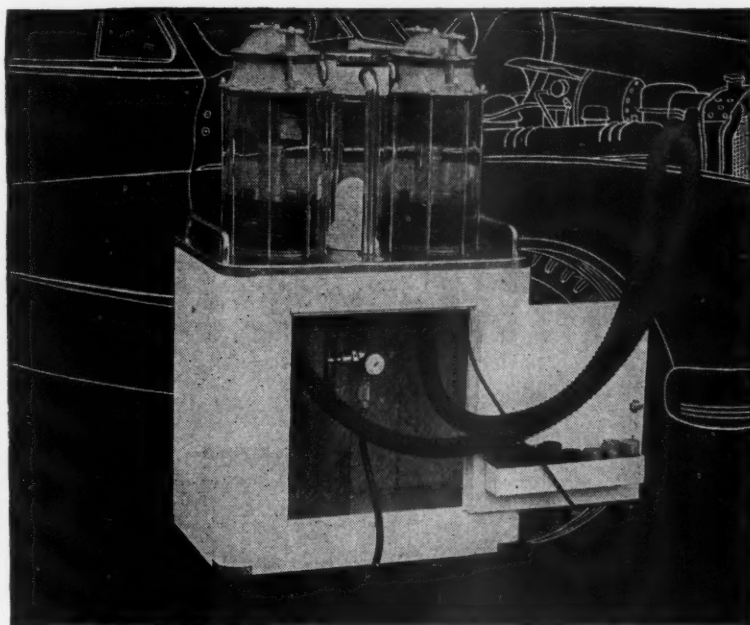
KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICHIGAN



Wheels—Hub and Drum Assemblies—Brakes—"Vacdraulic" Brake Power Units—for Passenger Cars, Trucks, Buses—made by Kelsey-Hayes' 4 Michigan Plants and Windsor-Canada Plant • "Magdraulic" Electric Brakes • "Lathan" Vacuum Power Brake Equipment for Tractor-Trailers—made by Kelsey-Hayes' South San Francisco-Lathan Plant • Wheels—Hubs—Axles—Parts for Farm Implements—made by Kelsey-Hayes' French & Hecht Plant at Davenport, Iowa.

\$ Cleans Cooling Systems in less than THIRTY-MINUTES



Triple Action Cleaning . . .

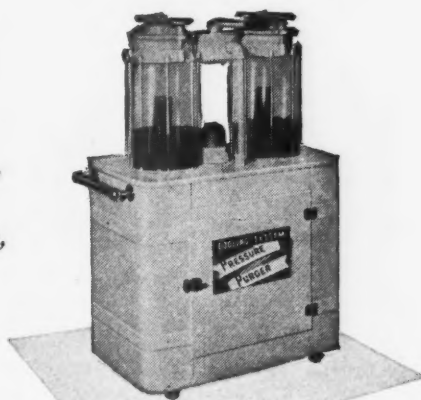
1. BY HEAT
2. MECHANICAL AGITATION
3. BY CHEMICAL ACTION

- No moving parts — minimum maintenance.
- Less than 30 minutes for complete set-up and purge.
- Easy to operate from ordinary AC-DC shop current and air compressor.
- Visible cleansing action loosens, dissolves, and filters out rust, scale, grease and grime.
- Triple-action, continuous reversing motion thoroughly cleanses radiator and motor-block water jackets.
- Gleaming metal cabinet offers exceptional merchandising appeal.

THE HIT OF THE A. S. I. SHOW

"Thank you for your
wonderful reception."

H. H. Charles,
President.



Choldun

MANUFACTURING CORP.

New Haven, Conn.

SALES OFFICE: 512 FIFTH AVENUE, NEW YORK 18, N. Y.

THINGS TO KNOW ABOUT COOLING SYSTEM CLEANING EQUIPMENT

Operation—

Q: When using the *Pressure-Purger*, does the car motor have to be running?

A: NO. Heating elements in the *Pressure-Purger* heat solution to necessary temperature.

Q: Does other equipment require the motor to run for a long period of time?

A: YES, and this is harmful to the motor.

Equipment—

Q: Does the *Pressure-Purger* have any motors, pumps, or moving parts which develop service difficulties?

A: NO. There are no moving parts.

Q: Does other equipment have motors, pumps and moving parts.

A: YES.

Merchandising Appeal—

Q: Does *Pressure-Purger* show the rust, scale and foreign particles removed from the cooling system?

A: YES. There is an action which traps the sludge before the eyes.

Q: Does other equipment have visual customers merchandising appeal?

A: NO.

CHOLDUN MANUFACTURING CORP.,
512 Fifth Avenue, New York, 18, N. Y.
Please send me complete details on the PRESSURE PURGER . . .
and how it will increase sales.

Firm Name.....
Address.....
City..... State.....

MORE MOTORISTS V

“AMERICA’S

SPARK

EVERY

**S VOTE FOR
S FAVORITE
K PLUG"
Y YEAR — do you stock
and sell it?**

CHAMPION SPARK PLUG COMPANY

Bring In **MORE** Business with Genuine Ford Piston Rings

For Longer Life
14 STABILIZING
POINTS WHEN
INSTALLED

OIL RING
1: Inner Ring
or Expander
(a Ford Exclusive)
2. Steel Section
3. Cast Iron Oil Ring
4. Steel Section



Want more Ford service business?
Always use Genuine Ford Parts—
the ones Ford owners like best! Made
right to fit right, last longer. Stock Genuine Ford
Parts for more business—call your Ford Dealer
or Ford Parts Distributor for quick delivery.

Genuine Ford Steel Section Piston Rings **Exclusive . . . Patented . . . Made Right . . . Priced Right**

Only cast iron ring section contacts cylinder wall during break-in period, eliminates scoring danger. After breaking in, steel ring sections absorb wearing forces. The inner ring has fourteen contact points which stabilize and control the ring and piston. Result—Genuine Ford Steel Section Piston Rings give reduced piston vibration . . . longer piston and ring life . . . better oil control . . . more power and economy.

Genuine FORD Parts . . .
Right for FORDS!



Independent **Garages . . .**

This sign of good business tells the town you stock Genuine Ford Parts, can bring in more business for you. Get in touch with your Ford Dealer or Ford Parts Distributor today . . . learn how you can qualify to use this business-building sign that's known and trusted from coast to coast.

F O R D M O T O R C O M P A N Y

Repainting
CAN BE
YOUR BIG PROFIT OPERATION



These four essentials
comprise the
**Complete Package
Paint Shop**

1. **A Spray Booth**... providing adequate exhaust, scientific illumination and positive dust protection.
2. **An Assortment of Spray Equipment**... for factory quality results on all kinds of jobs with any spray material.
3. **An Adequate Air Compressor**... to provide ample low cost air for all paint shop and service requirements.
4. **Hose and Connections**... designed and built specifically for spray painting service.

Operators find DeVilbiss Complete Paint Shops cut painting time and produce better jobs

In a single package a DeVilbiss Complete Paint Shop provides you with all the essentials for handling a large volume of painting on a greater profit basis. Operators can increase output to five or more cars a day in the Complete Paint Shop. And the sparkling "new car" quality of the finished jobs will command higher prices and yield bigger profits.

DeVilbiss paint shops are roomy, scientifically lighted and ventilated. They are equipped with the same highly perfected spray guns that are used on automotive production lines. And specialized equipment for such profitable odd jobs as touch-up, underbody coating, spotting, and radiator core painting is also included.

These are only a few unusual features of the Complete Package Paint Shop. There are many more that will save you time and make money on all painting operations. Your DeVilbiss distributor will be glad to give you the complete story.

THE DEVILBISS COMPANY • Toledo 1, Ohio

Canadian Plant: WINDSOR, ONTARIO

DEVILBISS

means Quality in all four..



**SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS**

John
BEAN

VISUALINER...



Install "ONE-STALL" ALIGNING

By using one of the many John Bean pre-tested pit installation designs, a VISUALINER occupies no more of your floor space than the average stall. The installation illustrated, a simple, inexpensive, 24 inch pit, is one of the many diagrammed in the John Bean Pit Installation book available at your jobber's. Ask him to show it to you. Ask too, for complete information on the John Bean Visualiner—the unique optical light ray aligning system that saves time, improves service, increases profits . . . the steering service that motorists ask for by name.

JOHN BEAN 
Division of FOOD MACHINERY CORPORATION
LANSING 4, MICHIGAN

WHEEL ALIGNERS AND CORRECTION TOOLS . . . WHEEL BALANCERS
AND BALANCING TOOLS . . . WEIGHTS . . . CAR WASHERS



**FLEXIBLE FUEL LINE
MERCHANTISER.**
Covers over 90% of
all flexible gas
and oil line jobs.
No. 161-FTB.

**BRASS FITTING
STOCK.** Keeps
fittings handy,
clean, sorted.
No. 430-F.



**FLEXIBLE HOSE and
ATTACHABLE
FITTING KIT** for
making up flexible
lines. No. 115-FN.

**These Merchandisers
Will Help You...**

**MAKE LIFE LINES
A PROFIT LINE in '49**

**Gas and Oil Lines are the Life Lines of Cars
and Trucks—a BIG replacement market with
excellent profit opportunities.**

In gas and oil line parts, tools and merchandisers, *the Imperial Line is the Quality Line* . . . quality that is so well typified by Imperial Brass Fittings . . . now **FORGED** for greater strength and toughness.

Imperial Merchandisers also are the quality leaders. *They keep the right parts instantly available—a big factor in helping you make gas and oil line parts a bigger profit line.*

Stimulating sales helps in the form of marketing suggestions, handy data charts, folders, posters, etc., round out the *Imperial Program to help you Make Life Lines A Profit Line in '49.* Ask for Bulletin 355.

THE IMPERIAL BRASS MFG. CO., 1217 W. Harrison St., Chicago 7, Ill.



See Your Imperial Jobber Now.

IMPERIAL

Flexible Lines • Strainers • Barrel Faucets
Brass Fittings • Shut-Off Valves
Service Aids • Tube Working Tools



BRASS FITTINGS
Forged for greater
strength

Extra length
pipe threads

**FLEXIBLE GAS
and OIL LINES**
Imperial Quality
Throughout



**FLEXIBLE HOSE
and ATTACHABLE
FITTINGS**
For making
up gas and
oil lines.



CRESCENT Makes Selling Easy!

Carefully designed outstanding merchandisers like these make it easy to sell . . .



● THE FINEST PRODUCTS IN THE FIELD

The Crescent-Wiry Joe line is manufactured in the largest wire mill in America specializing in the development and production of automotive replacement wire and cable.

● IN THE FINEST PACKAGING

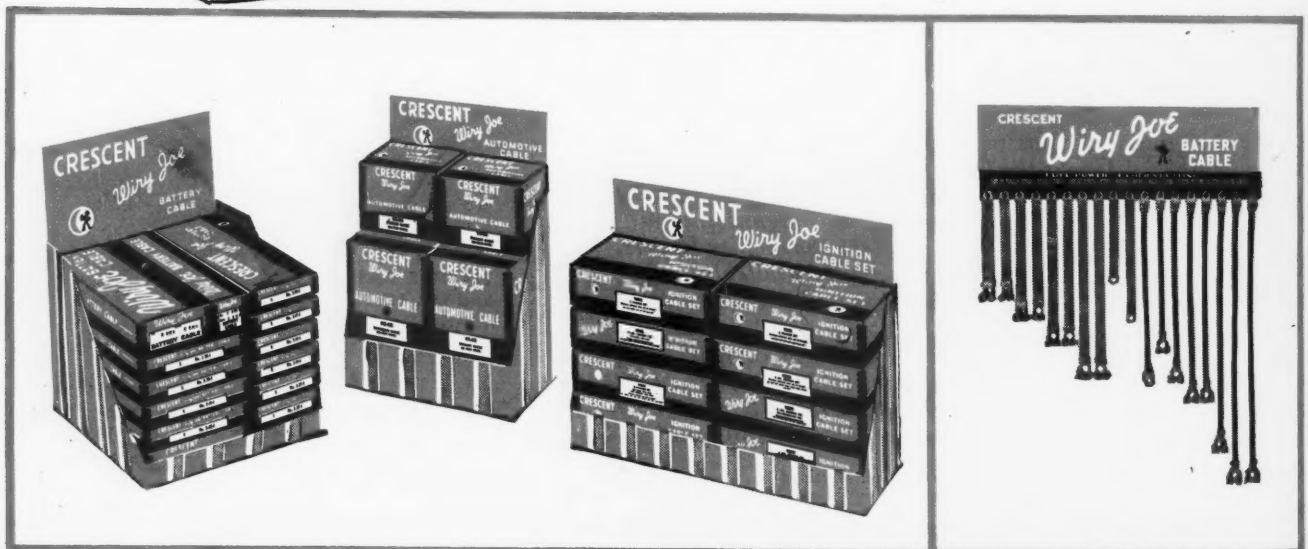
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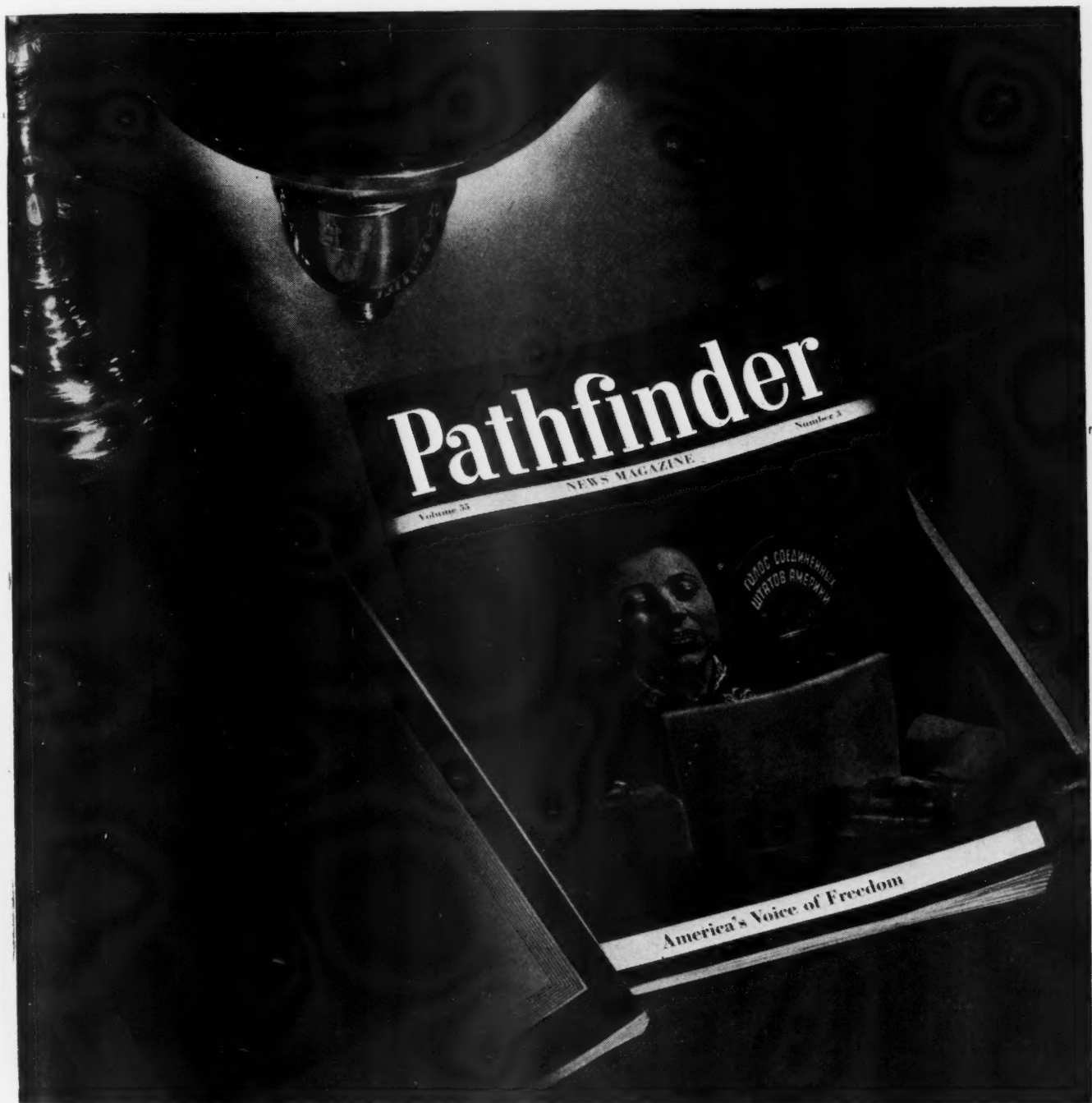
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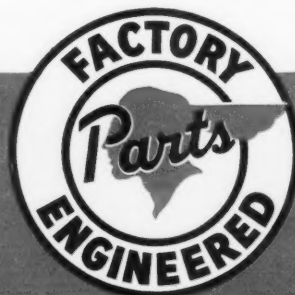
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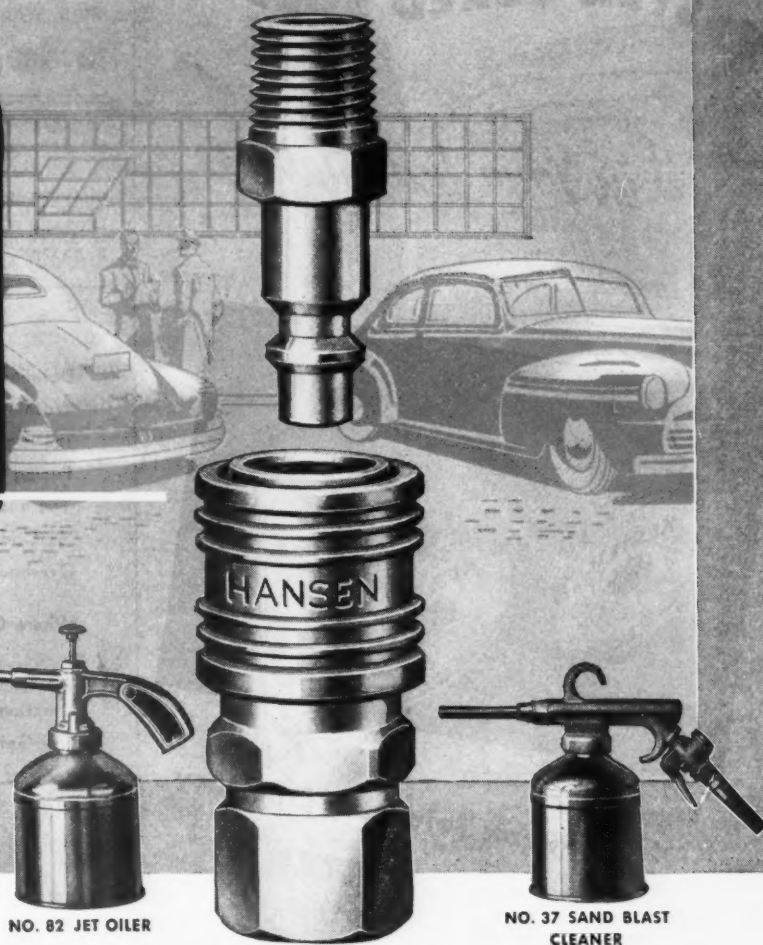
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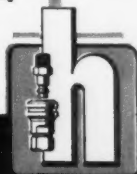
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MOTOR AGE

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FOR AUTOMOTIVE SERVICEMEN

VOL. LXVII, No. 12

November, 1948

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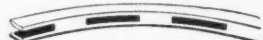
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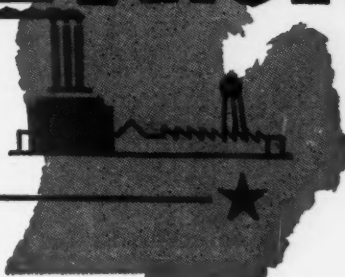
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PISTON RINGS

BEST IN NEW CARS!

BEST IN OLD CARS!

Dateline **DETROIT**



by Leonard Westrate.

★ Look for one major tire manufacturer to offer tires made from the new "cold rubber" within the next few months. The cold rubber is said to offer up to 30 per cent more tread wear than natural rubber.

★ There is little likelihood of Chevrolet using an automatic transmission in 1949. The division is very much interested in a torque converter and it is reported that initial orders for tooling have been placed. However, the job of getting into volume production that would be required by Chevrolet, even on an optional basis, is a tremendous undertaking that will require many months. The Buick Dynaflow production setup, for example, required nearly 500 new machines and rebuilding of an additional 180.

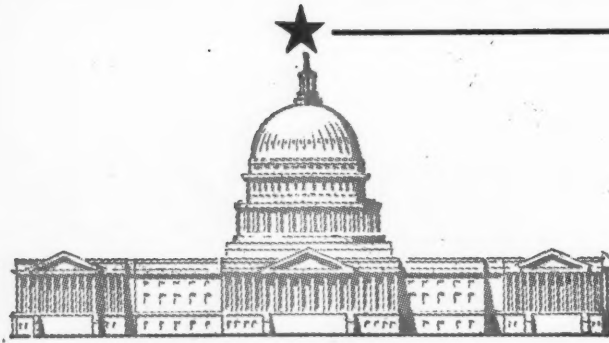
★ Although not definitely confirmed, it is reported that Pontiac will use a new "A" body exclusively next year, the same one to be used on Chevrolet and the smaller Oldsmobile series. This probably indicates also just one wheel base model instead of two as at present.

★ From reports from suppliers it is believed that Chrysler will use bonded brake linings on at least one of its passenger cars in 1949 and possibly on all four lines. The reports say that suppliers of brake lining and equipment required for handling bonded linings are already making deliveries to Chrysler and its dealers. Dodge division has used bonded linings on its small trucks for many months and consequently has had considerable field experience with them.

★ Automotive repair work is not in the category covered by the credit regulations requiring one third down payment. Repair shops can finance work without being bound by the provisions of Regulation W, even though the account is sold later to a finance company.

★ Willys-Overland is experimenting with an F-head engine. It differs from conventional design in that intake valves are located in the head with exhaust valves located in the block. The company has not indicated, however, that it intends to adopt that type engine but merely says it is experimenting with it.

★ The defense program has had practically no effect on Detroit automotive production as yet and so far there is nothing of any consequence in sight. Ford reports that it has nothing in the way of military orders, tentative contracts, or letters of intent for any type of military vehicle. It is understood that one manufacturer has turned out a small order of military vehicles but that it was not large enough to be of any particular consequence.



by E. J. Hardy

WASHINGTON WIRE

As part of its program of conservation of motor oil, the Federal Government is expected to approve a circular specifying a minimum period between engine oil changes of 6,000 miles. On the basis of data secured from various sources, including the Bureau of Standards, Ordnance Department, and private fleet operators, it is felt that with installation of an efficient oil filter this minimum period will be safe under all operating conditions except those of very extreme service.

Auto production is sure to suffer if Congress approves a multi-billion dollar military lend lease program next year. Western Europe's needs for trucks and motorized equipment are acute and these items are sure to be included. Add this demand to the steel shortage already existing and it adds up to less autos and perhaps even a bite into domestic truck output.

Final action on a new international agreement designed to permit motorists to drive their cars in foreign countries. This proposal will be taken by the United Nations Economic and Social Council before the end of August 1949. The State Department has already held conferences with interested groups in this country to prepare American members of the Council for coming meetings.

Auto supply dealers handling electrical appliances will have tough sledding next year. The Department of Commerce predicts that competition is going to be rough-and-tumble next year, and that "imaginative merchandising and intensive sales effort" by dealers will determine their success or failure. Dealers who have been simply apportioning merchandise to waiting lists will have a tough row to hoe.

More trained auto mechanics should be coming onto the labor market in the months to come. The Labor Department reports that the number of registered auto mechanic apprentices increased 50 percent in the twelve months ending July 1, 1949. The total number in training at that time was 22,300.

Production of the new cold rubber which gives approximately 30 percent longer mileage in tire treads will be increased eight-fold during the next year. Reconstruction Finance Corporation has authorized this expansion program which will increase annual production capacity from 21,000 to 183,000 tons. Decision to increase productive capacity was made after tests proved that this rubber, polymerized at temperatures of 41 degrees and below, is the best tire tread material known. About half the total synthetic rubber plant capacity will be equipped to produce the cold rubber.



MOTOR AGE

NOVEMBER 1948

the Right Route

Automotive business men, alert to the everyday needs of their customers, are ever-watchful for signs, guide-posts that show the right road to business prosperity.

As you read this, the great Automotive Service Industries Show is about to take place at Navy Pier in Chicago. There manufacturers will join with their wholesalers in serious discussion on new merchandising plans and new approaches to the automotive service market. There, too, will be an eight-mile long display of the best that the industry has to offer in shop equipment, replacement parts, tools, accessories and supplies.

It's a great merchandising show. And, one of its main objectives is to bring home to you—the automotive service dealer—all that's new and ready for use in your shop; and to increase your parts sales; and, to aid you in selling service, supplies and accessories.

The editors of MOTOR AGE will cover the water-front at Navy Pier, as a timely service to their readers. Our force will reach every booth and every display.

The result—a package of practical profit opportunities prepared to help you—our readers—take the right route for better service on your customers' cars and greater profits for you.

In January, 1949, you will receive the only complete review of the Automotive Service Industries Show—in MOTOR AGE. This great industry show will reveal for the first time new products, new merchandising plans, new programs and objectives for service dealers in 1949. On-the-spot reporting by MOTOR AGE editors will enable us to bring you a full and comprehensive picture of all that's new and ready to sell . . . a profit preview for 'forty-nine . . . Just a tip, old boy. Watch for it!



Frank P. Tighe
EDITOR.



FACING YOUR WAY



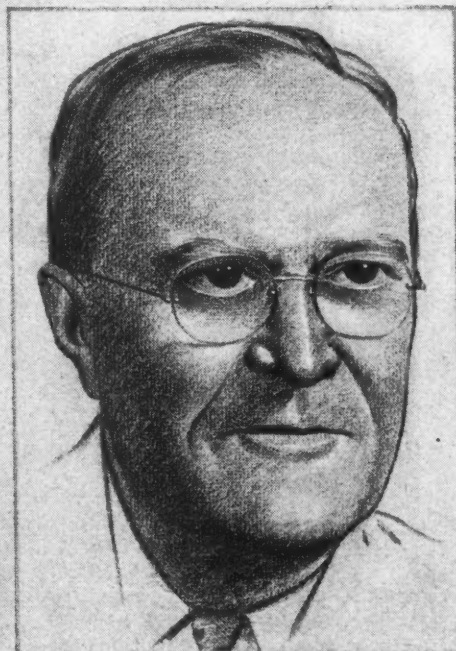
B. W. RUARK, General Manager of the Motor and Equipment Wholesalers Association



J. L. WIGGINS, Executive Vice President of the National Standard Parts Association



A. H. EICHHOLZ, General Manager of Motor and Equipment Manufacturers Association



A. B. COFFMAN, Manager of the Automotive Service Industries Show to be held in Chicago

Great Panoramic Preview of 1949
Service Dealers' Profit Opportunities
Unfolded at A.S.I. Show in Chicago



You and the Automotive Service Industries Show

by Frank P. Tighe
Editor

THE Automotive Service Industries (A.S.I.) Show is actually a show which is visited by automotive manufacturers and their wholesalers . . . but the principal benefits are planned for service dealers everywhere in the U. S.

Staging the show is a tremendous undertaking and this year attendance is expected to be greater than 20,000 at Navy Pier, Chicago, December 6-10. More than 500 manufacturers will use 1,444 display booths in an eight-mile long demonstration of new shop equipment, replacement parts, tools, accessories and supplies. Here new merchandising plans will be introduced for the year 1949. The manufacturer, his representatives, his wholesalers and their salesmen will gather to plan and study the market possibilities of each product—and then to bring all the sales-making ideas back home to the service dealers.

That, it seems to us, is one of the greatest accomplishments of the A.S.I. Show. For just around the first part of January 1949, you'll be hearing about the great new developments that presage profit opportunities next year. Your jobber and his salesmen will be demonstrating these new developments, and as stated elsewhere in this issue, **MOTOR AGE** will present its special issue of 1949—in January—a factual and pictorial presentation of the same great show together with an important forecast for the com-

ing year as well as a review of the 1949 cars.

The Automotive Service Industries Show and its predecessors dating all the way back to 1919 has had a colorful history. From 1919 through 1929, the "big show" was known as the A.E.A. Show which was under the auspices of the old Automotive Equipment Association. Chicago was the show city through this span of eleven years, with the show going to Cleveland in 1930 under the sponsorship of National Standard Parts Association (N.S.P.A.) and Automotive Equipment Association (A.E.A.). Atlantic City and Detroit were chosen for the 1931 and 1932 shows under the combined supervision of Motor Equipment Assn. (M.E.A.) and N.S.P.A.

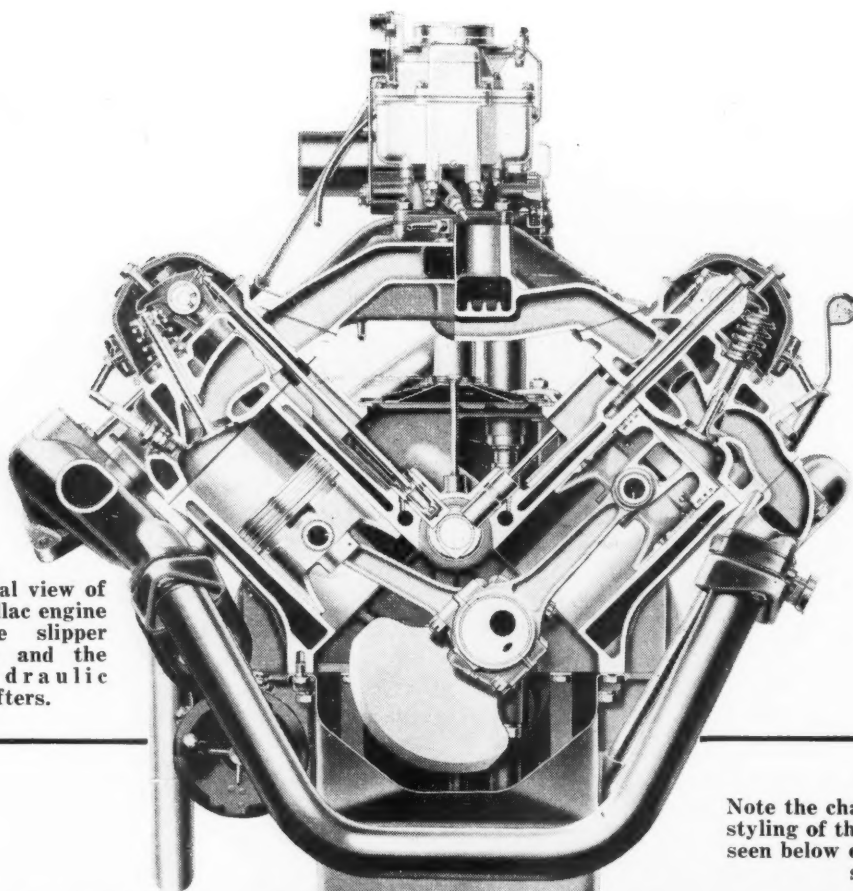
This year, as in the years since 1933, the sponsoring associations are Motor & Equipment wholesalers Assn., Motor & Equipment Manufacturers Assn. and National Standard Parts Assn.

The honor for naming the A.S.I. Show goes to one of the industry's most respected wholesalers, Vern Hossellman of Siferd-Hossellman Co., Lima, Ohio, who later became president of N.S.P.A. "The Great White Father" of the A.S.I. Show was the late Frederick Glade Wacker, who, at the time of his death, was president of Ammco Tools, Inc., N. Chicago, Ill.

All through the long and successful history of
(Continued on page 140)

'49 CADILLAC features NEW ENGINE

Cross sectional view of the new Cadillac engine showing the slipper type pistons and the simplified hydraulic valve lifters.



Note the change of the grille styling of the new Cadillac as seen below on this 60 Special sedan.

ENGINE SPECIFICATIONS

Type Valve-in-head, 90 deg. V block
 No. Cylinders ... 8
 Bore 3 13/16 in.
 Stroke 3 1/4 in.
 Displacement ... 331 cu in.
 Compression Ratio 7.50 to 1
 Rated Bhp 160 hp at 3800 rpm
 Rated Torque 312 lb ft @ 2000 (max.) rpm
 No. Main Bearings 5 Durex type
 Piston Slipper type, aluminum alloy



by Joseph Geschelin

THE most important change in the Cadillac line, the first General Motors Division announcement for 1949, is the adoption of the high compression, high speed valve-in-head engine. The new engine is a 90 degree V-8 of valve-in-head design with a simplified system of hydraulic valve lifters. Prototypes of the current production engine have had more than one million miles of actual service before being released for manufacturing.

With a compression ratio of 7.50 to 1, and a displacement of 331 cu in. the engine develops 160 hp and is said to yield an increase in fuel economy of 15 to 20 per cent over previous models under most driving conditions.

The car is said to accelerate from a dead stop to 80 mph in 30 seconds with full throttle on a level straightaway. Contrary to conventional experience fuel economy gain increases at higher road speeds, being higher at 80 mph than at 20 or 40 mph.

The line remains substantially the same in

other mechanical specifications and styling. The same series and models are in the line—Series 61, Series 62, Series 60 Special

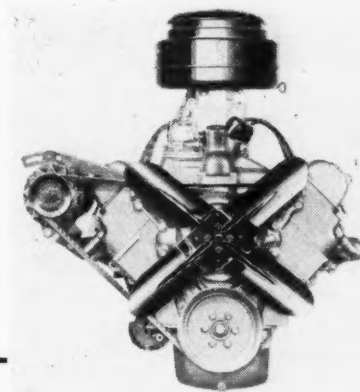
and Series 75. The convertible model—which accounted for more than 10 per cent of sales in 1948—remains in the Series 62. It has been completely trimmed in leather except for a deep pile carpeting.

Nineteen hundred forty-nine models accent a longer hood line with ornament moved forward while the front end appearance has been altered by the introduction of a new grille which extends across the front fenders to the wheel openings. Interior treatment is entirely new and features a newly designed instrument panel and flush type instrument cluster on the left side.

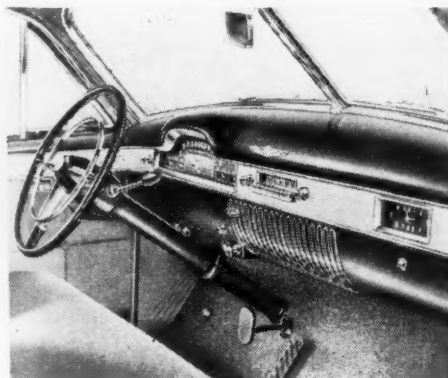
The company has produced an engine of smaller displacement but with an increase in horsepower from 150 to 160 hp. At the same time the powerplant is 4¼ in. shorter and 3 in. lower. The engine now weighs approximately 200 lb less than the previous L-head engine.

These changes stem from the combination of many factors, some of which will be described
(Continued on page 72)

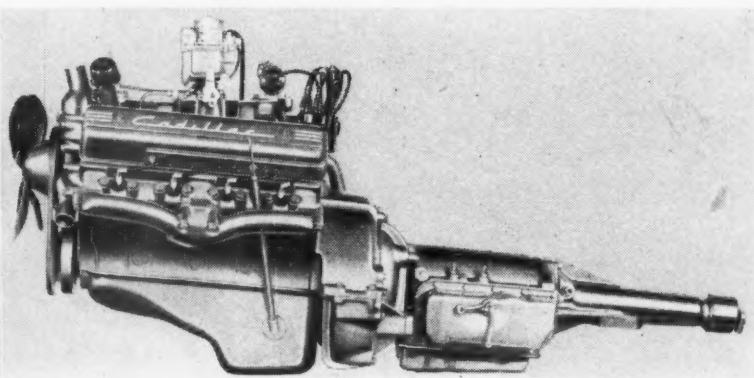
*The more economical valve-in-head
V-8 engine has 7.50 to 1 compression
and simplified hydraulic valve lifters*



This view shows the new interior styling with the flush type instrument cluster on the left.



Side view of the powerplant showing accessibility of the accessories. The coil is on top forward of the distributor.



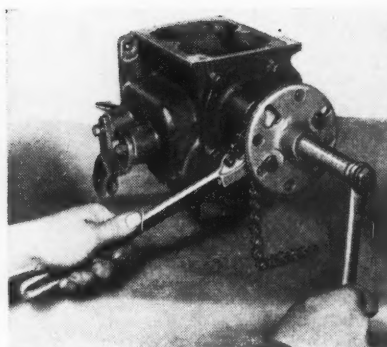


Fig. 1. Removing the transmission companion flange using a special flange pulling tool.

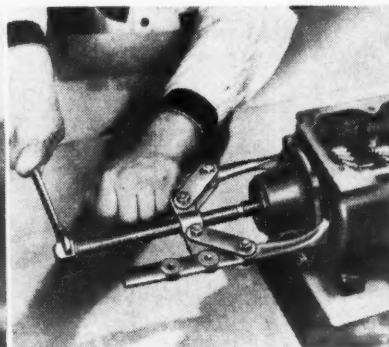


Fig. 2. Removing the transmission mainshaft bearing retainer with a universal puller.

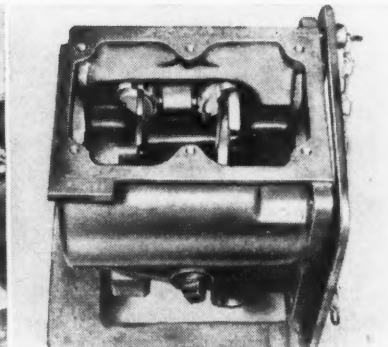


Fig. 3. Transmission shifting mechanism (mainshaft assembly) is cocked away from the shift fork and shoe.

Overhauling the KAISER Transmission

Each step of the procedure is described in this article . . . by Jack Montgomery
Technical Editor

THE transmission should be thoroughly understood before dismantling, in order to service it properly.

Before disassembling the transmission, carefully check the shifting interlocking mechanism for excessive clearance wear. If these parts are worn badly they should be replaced.

Disassemble the sub-assemblies as follows: Remove the cover screws and cover. Then flush

out the inside. Remove the companion flange nut and install a puller to remove the flange. Fig. 1. After flange has been removed examine the oil seal and replace it if necessary. Remove the bearing retainer bolts and pry the retainer from the case to allow room for a puller. Fig. 2. Remove the main drive gear retainer bolts and slide off the retainer. Drive out the lock plate
(Continued on page 78)

Fig. 4. Transmission with the gears in neutral position, showing the location of the lock pins.

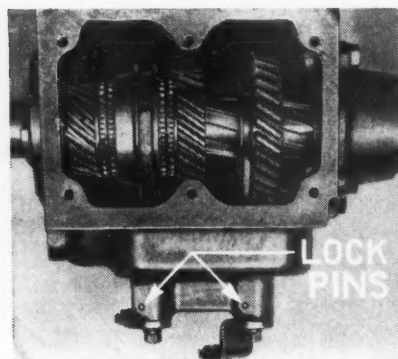


Fig. 5—Removing the transmission rear mainshaft bearing snap ring, which secures the bearing in the retainer.

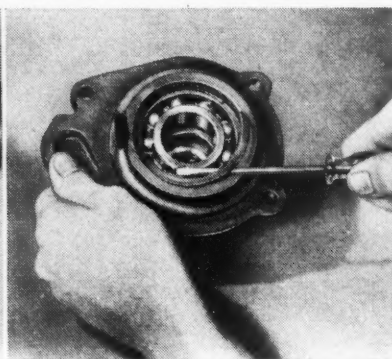
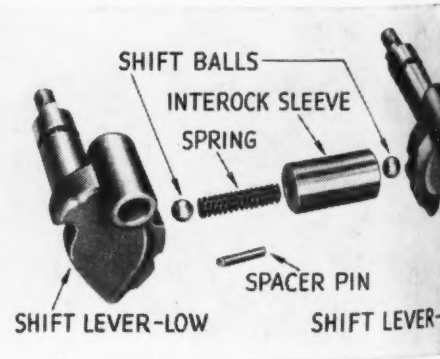
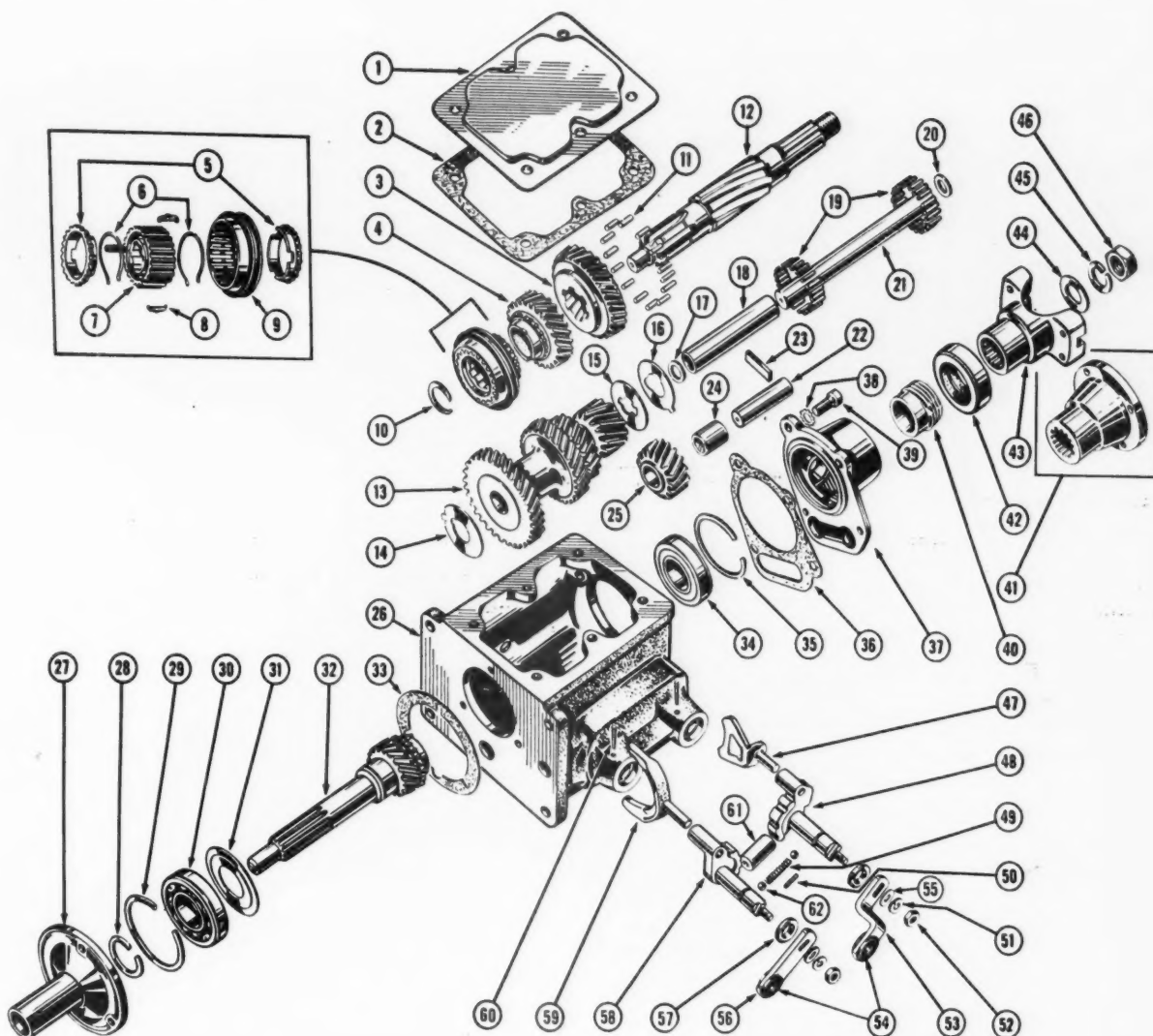


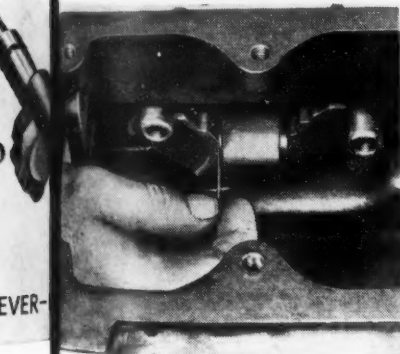
Fig. 6. Exploded view of the shifting mechanism, showing the shift levers and related parts.





An Exploded View of the Kaiser Transmission.

Fig. 7. Checking the interlock sleeve clearance to be between .001 in. and .005 in.



1. Case Cover
2. Case Cover Gasket
3. Mainshaft Gear (l. and r.)
4. Mainshaft Second Speed Gear and Bushing
5. Blocking Ring
6. Synchronizer Spring
7. Club Hub (high and int.)
8. Shifting Plate
9. Clutch Sleeve (high and int.)
10. Main Drive Gear Snap Ring
11. Pilot Bearing Rollers
12. Mainshaft
13. Countershaft Gear
14. Countershaft Thrust Washer (front)
15. Countershaft Thrust Washer (rear)
16. Countershaft Thrust Washer (rear)
17. Countershaft Bearing Washer (front)
18. Countershaft Bearing Spacer
19. Reverse Idler Bearing Rollers
20. Countershaft Bearing Washer (rear)
21. Countershaft
22. Reverse Idler Shaft
23. Lock Plate (idler and c'shaft)
24. Reverse Idler Gear Bushing
25. Reverse Idler Gear
26. Transmission Case
27. Main Drive Gear Bearing Retainer
28. Main Drive Gear Snap Ring
29. Bearing Snap Ring

30. Main Drive Gear Bearing
31. Oil Retaining Washer (front)
32. Main Drive Gear
33. Main Drive Gear Brg. Ret. Gasket
34. Mainshaft Bearing (rear)
35. Main Drive Gear Bearing Snap Ring
36. Rear Bearing Retainer Gasket
37. Mainshaft Bearing Retainer (rear)
38. Washer (external toothed)
39. Capscrew
40. Standard Trans. Gear (4.09 ratio)
41. Companion Flange (trunnion type)
42. Mainshaft Oil Seal
43. Companion Flange (yoke type)
44. Mainshaft Washer
45. Mainshaft Lock Washer
46. Mainshaft Nut
47. Shifting Shoe (low and reverse)
48. Shift Lever (low and reverse)
49. Poppet Spring
50. Shift Ball Spacer Pin
51. Lock Washer
52. Nut
53. Outer Control Lever (low and reverse)
54. Outer Control Lever Grommet
55. Outer Control Lever Washer
56. Outer Control Lever (high and int.)
57. Shift Lever Shaft Oil Seal
58. Shift Lever (high and int.)
59. Shift Fork (high and int.)
60. Control Lever Taper Pin
61. Interlock Sleeve (use as req'd.)
62. Shift Ball (Poppet)

As the year end approaches, here are six important business guides to check. They'll help you profit on your operation

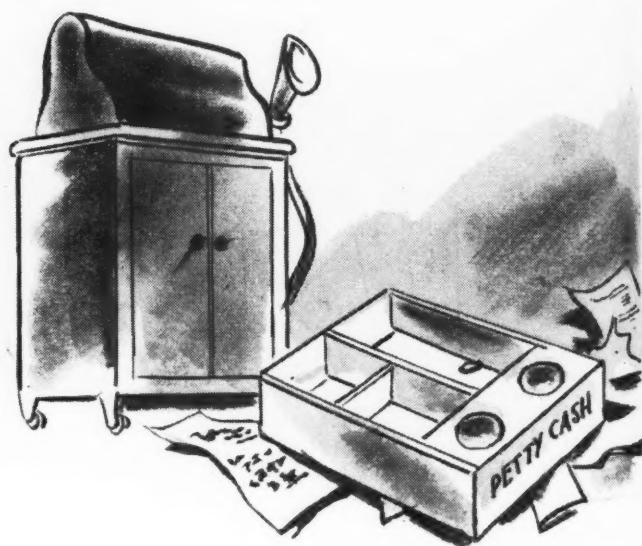
THE end of the year is approaching. The time to review your business activities is near. Let's examine the year-end review in the automotive shop. Too many automotive maintenance men operate from day to day, utilizing no long-term objective and never check on the methods they have employed to earn the profit or suffer the loss that shows up on their books at the end of the year. Both a review of the year that has passed and a preview of the year to come will help the maintenance man evade many pitfalls and earn a bigger profit on sales.

At year's end, these are the main things to consider when reviewing activities covering the past 12 months.

First. Is your profit larger than last year? This isn't hard to determine. Almost every automotive maintenance man does make this comparison, but he stops there. He should try to determine why there is a variance. Often such investigation discloses weaknesses that can be corrected in subsequent periods or particularly effective methods that have increased sales or profits. Too often, however, the maintenance man accepts a drop or an increase in sales or profits as inevitable, without knowing the "why" behind the result. It's just good business to make a detailed comparative analysis of your business figures covering the current year and prior years in order to determine the reasons behind a variance in the net profit.

For example, one maintenance man lost money in 1947 and consulted his accountant, the service dealer had an idea that someone in his employ was stealing and wanted a cash audit made, also a detailed check of the inventory. He never made a practise of reviewing the year's activities and he lumped his sales. In other words, the figures for major repairs, minor services, gas, oil, accessories, and so forth, were not departmentized. When we went over

by Arthur Roberts



Where, Oh Where,

his figures and departmentized them, charging each department with its pro-rata share of overhead, we found that he was losing money in two departments, an "invisible loss" because a substantial profit in the remaining departments carried the "dead heads." When shown the real reason why he had lost money in 1947, his books were arranged so that he could keep accounts



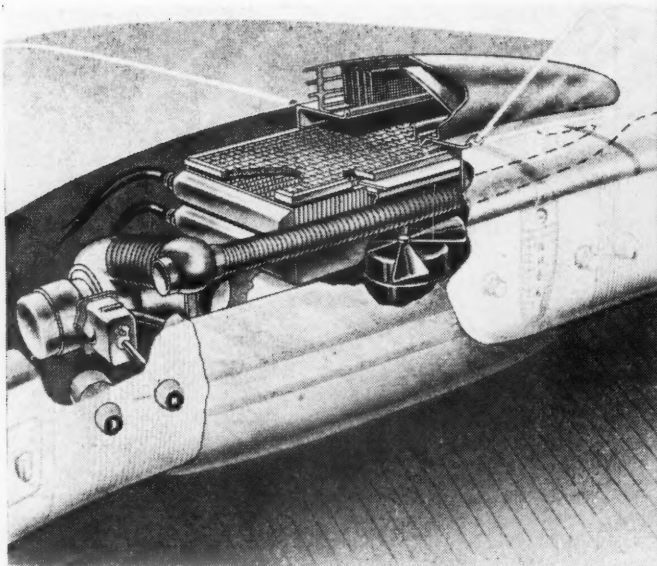
Has My Little DOUGH Gone?

according to departments. He began to push for more volume on the "weak sisters" and within a few months was earning a satisfactory profit.

Second. Have you reviewed the figures you will report on your income tax return? Before you close your books, see that all bad debts are written off, that you have charged off the right depreciation, that your expenses are all entered,

that you have accrued items that are due, but not yet paid, such as mortgage interest. Ordinarily, the tax law is concerned with income and outgo for the taxable year and you cannot include in next year's return an expense that should have been charged off the year before so see that you record all deductible items

(Continued on page 92)



Cutaway view of the dash showing the redesigned Weather-Eye, in which the defroster fan draws intake air from below the heater element.



The new Nash bed has been restyled so that it can be made up completely within the car, and one passenger can sleep while the other drives.

Features include new body styling, coil springing on all four wheels and torque-tube drive on both models; redesigned crankshaft, carburetor, and exhaust manifolds; improved economy; and twin beds

Styling and Mechanical Improvements

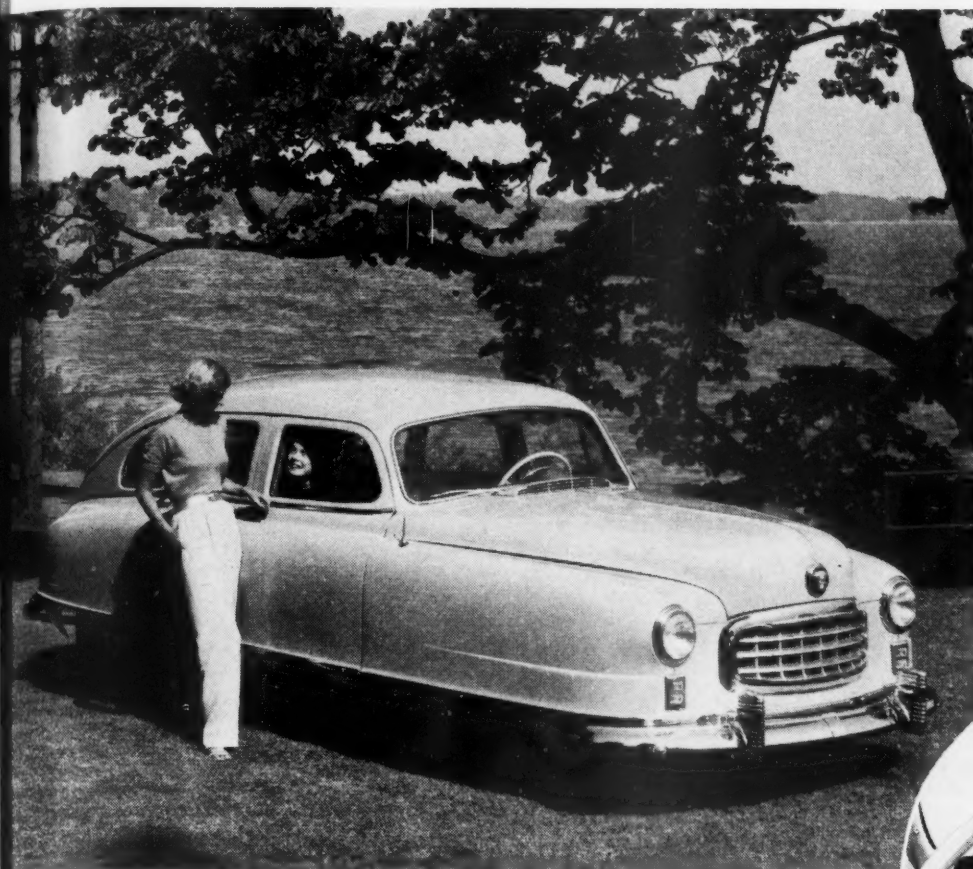
THE Nash "600" and Ambassador lines completely restyled for 1949 and offering important mechanical changes and improvements have been announced by Nash-Kelvinator Corp. The two lines have advanced styling executed in unitized bodies—termed "Airflyte"—said to be first postwar models with front wheels totally enclosed. Despite the closure of both front and rear wheels the design permits full swing of front wheels on turns by making the fender line well outside the wheels. Tire removal is said to be effected without difficulty.

The wheelbase remains the same as before—112 and 121 in. respectively—the overall length being increased less than an inch. On the other

hand the front tread has been narrowed to 54-11/16 in. on both models to accommodate the enclosed front wheel well. Front seat width is about six inches wider, the rear seat about one inch wider. The floor is about 2½ in. lower while the roof is about six inches lower.

All instruments are grouped in a single housing, shrouded for shielding from glare. This instrument housing—called the "Uniscope"—is mounted on the steering column just forward of the steering wheel and in a position close to the normal line of vision.

The steering column jacket has been made four inches in diameter and fully encloses the steering column, gear shift linkage, speedometer cable,

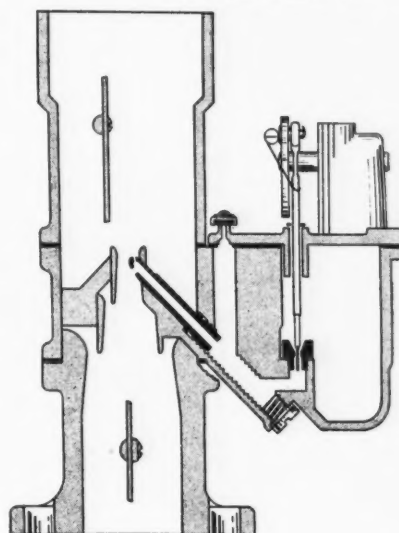


Note at the left, the skirted front fenders, which have necessitated the narrowing of the front tread.

As seen below, all instruments are now grouped in a single housing, called the Uniscope.



The cross-sectional view below shows the simplified carburetor, which is said to give improved economy.



Featured on 1949 NASH

and wiring to the Uniscope and light switches and to the direction signal, the latter being an optional accessory.

Although engines for both models remain unchanged so far as mechanical specifications are concerned, they both feature many important changes conducive to improved performance. On the "600" the crankshaft is 80 per cent counterweighted—compared with 63 per cent last year—the shaft being redesigned for greater stiffness. Diameter of crankpins is increased from 1-7/8 to 2-3/32 in., increasing the diameter of connecting rod bearings correspondingly. Since a larger bearing area is not necessary, it was possible to decrease bearing width and thus permit thicker cheeks between bearings, this resulting in a 25 per cent increase in shaft stiffness.

The Ambassador crankshaft remains 100 per cent counter-
(Continued on page 104)



Due to the out-of-town location, the Vernon Shoff garage is able to have attractively landscaped grounds.

Location isn't Everything . . . *Away from the town*

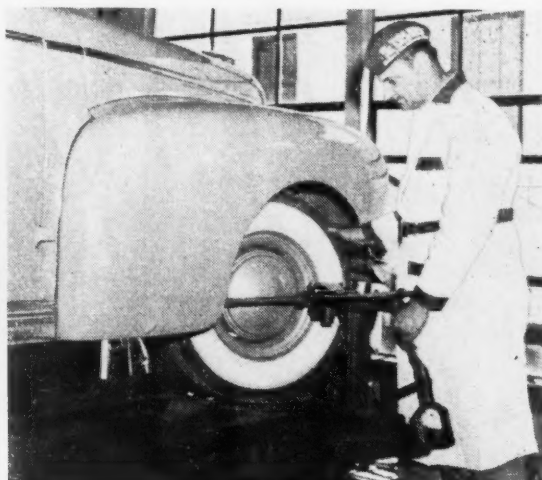


Vernon Shoff (right), who has increased his service volume by over 17 times in ten years, is seen here talking to his right hand man.

OF all the factors that are considered before starting a business, location probably is the one that gets the most attention. Businessmen know that everything else being equal, location can make or break any enterprise. But location isn't everything, and a business can be highly successful in a poor location. A case in point is Vernon E. Shoff's repair shop, 720 Fair Ave., Benton Harbor, Mich. Shoff's is situated on the very outskirts of town, and while it is



Mr. Shoff believes not only in having a clean, modernistic shop, but up-to-date equipment as well, as can be seen at the left, where a mechanic is using the latest tune-up apparatus, or below, wheel alinement equipment.



town and away from the highway Vernon Shoff's "guaranteed service" brought more and more customers each year

by Philip Brenton

quite near a state highway it is not really on it.

Shoff started his present enterprise in 1937 in a single car garage next to his home and in 10 years built his service volume up from \$10,000 a year to \$172,000. Previously he had operated a garage in downtown Benton Harbor and some loyal customers brought their business to his new location. Within 60 days increasing business warranted the hiring of a helper. In 1938 a small addition was built alongside the



Now used for a paint shop, this small building was the original Vernon E. Shoff garage of eleven years ago.

original building, and three more men were hired. In 1939 another building 20 ft. x 28 ft., the equivalent of a three-car garage, was built.

Due to zoning regulations which specified that only one three-car garage could be erected on each lot the new addition was set 18 ft. away from the rest. In a short time the new building was joined to the rest, making a building 66 ft. in length, not counting the original building

(Continued on page 126)



"And . . .," said Larry walking belligerently forward. "Just who was you referrin' to as a 'jerk?'"

Larry blamed "the kid" for a bad bearing job, and then proceeded to talk himself into trouble. He'd still be scratching his head if Pop had not come to the rescue



CHARLES
WHITMAN

POP GETS HIS BEARINGS

by Charles M. Kenyon
Managing Editor



POP had just finished unlocking the doors and the gas pumps and was putting change in the cash drawer when Tommy came whistling in. "Morning, Pop," he said. "It sure is a wonderful day—bright, sunny, crisp, clear."

"If it wasn't the first day of huntin' season I'd think you was crazy," said

Pop. "Let the old man in on it. How many did you get? And where?"

"Two pheasant Beauties!" said Tommy.

"Where did you say you hunted?" asked Pop again trying to hide his interest.

"Oh, west of town," answered Tommy non-committally and started to roll the tire display rack outside.

"That's a coincidence," said Pop. "I got my two in that same spot." Tommy looked at him quickly, then started to grin. "But," added Pop, "I only used one shell." Tommy's grin faded into skepticism. "A piece," concluded Pop.

They both turned as a 1942 Plymouth coupe with an obvious rod knock pulled up before the door. But before either Pop or Tommy could go outside, the driver had jumped out of his car and was halfway into the shop.

"What kind of a chisellin' outfit is this anyway," he snarled without taking the dangling cigarette from his thin lips. "Thought I wouldn't come back, hey, after I paid cash for the job."

"Leave your car here," said Pop quietly. "We stand behind our work. When that car left last night we thought it was in good condition, and we'll make it right, Mr. Cryle."

"You bet you will. Here I came way over to this side of town to get someone I could trust with my car and look what happens! You'll make it good, believe me!"

"Of course we will," said Pop. "Our word is

good. We'll have your car for you tonight."

As Cryle crossed the office to pick up a fistful of free paper match folders from the counter top, Larry came in through the shop-door.

"What's wrong with Cryle's Plymouth, Pop," he said. "We put in new mains and rods and did a valve job on it yesterday."

"It's got a rod knock," said Pop.

"You bet it's got a rod knock," chimed in Cryle. "And don't let the same jerk who worked on it yesterday touch my car again."

"In this shop the owner takes all responsibility for mistakes. I've told you the shop will fix your car." Pop was keeping his temper firmly in hand.

"And . . .," said Larry walking belligerently forward. "Just who was you referrin' to as a 'jerk'?"

"I did the job," Tommy put in quickly. The tension eased a bit as they both looked at Tommy.

"I know it," said Larry. "But this grub ain't callin' anybody a jerk. I've known him since grammar school an' the only reason he came way over here is because no one over our way will do work for him anymore."

"Tate," put in Cryle, "If I'd a known you worked here, that would have been a good reason to stay away."

Larry's eyes narrowed and his jaw jutted out. "I never did like you, Cryle, an' besides that set of pans you sold my wife . . . the bottom's melted right out and I had to get new burners for the gas stove."

"Now, now, that was 15 years ago, Tate." Without taking his eyes off Larry, Cryle began to move hurriedly backward, his empty hand groping for the door. With a last attempt at bravado he waved his finger warningly at Pop. "I'll hold you responsible for my car." With a side long glance at Larry he stepped out through the door and walked hurriedly up the street.

"That slowdown . . ." began Larry.

"Now before we all tee off," said Pop firmly, "Remember we did louse the job up. Which one

(Continued on page 114)

CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

• • • By JACK MONTGOMERY • Technical Editor



Trouble Shooting When:

- Nash fires in crankcase
- Chevrolet runs rough
- Transmission used as O.D.
- Rods knock after overhaul
- Grease leaks into rear end
- Chrysler slips into third
- Wheel bearing slides over nut
- Dodge overheats continually
- Ford 60 dies on pickup

1937 Nash Twin Ignition Firing in the Crankcase

I would appreciate some information regarding what might cause this 1937 Nash to explode or fire in the crankcase.

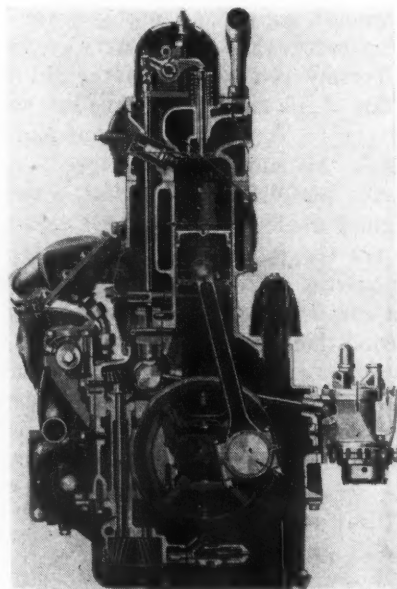
This car in question has never acted this way and recently I have overhauled the motor completely, and put all new Nash factory pistons, new intake and exhaust valves, new rings, pins, bearings, new gaskets and ground the valves. New ignition points, condensers, coils, and wiring were installed. The carburetor was cleaned completely, and adjusted.

This car is twin ignition, and runs and idles as nice as can be. High speed or low speed makes no difference. It will explode going along, but never misses a cylinder when it explodes. I drove with the owner to the next town, a distance of 13 miles one way and this car exploded twice going and twice coming back. The car does not hesitate during this explosion, whether idling, or on the road. I have in-

quired at the local Nash dealers, and they haven't come across anything of its kind.

The breathers are all open, and the oil pressure drops momentarily, when it explodes. John Lankers Auto Service, Morris, Illinois.

USUALLY when an engine explodes in the crankcase it blows



Cross section of 1937 Nash engine

out the breather cap or dip stick. You mention only hearing the explosion. Another odd thing is why it should bother the oil gage. My guess is the engine must hesitate for a second, causing it to slow down a little.

I would suggest removing the fuel pump and disassemble and examine the diaphragms. If the diaphragms are leaking, gasoline will get into the crankcase, thus diluting the oil. I have seen cases where the engine has exploded due to this condition.

You might also recheck the spark-plugs as they may not be the right heat range for your engine. They also will cause an engine to fire back through the carburetor. I would also make a compression test on this engine, making sure the new rings have seated.

My honest opinion is that it is caused by blowby and that it will take care of itself when the rings have seated themselves.

Late Model Chevrolets Run Uneven at Low Speeds

I wonder if you could give me some information in solving mystery of jerking on some late model Chevrolets at speeds of 20 to 30 miles per hour, between acceleration and idle.

I have checked timing and set both early and late, set points both closer and wider than standard, put

on new carburetors and adjusted them, checked tappets for clearance to .006 and .013, installed new plugs, and adjusted gaps to .040, .045 and .032, put on new vacuum advance, and checked wiring for loose connections.

Your suggestions will be very much appreciated. Lawrence Gruetzmacher, Service Mgr., Tripod Chevrolet, Inc., South Main Street, Clintonville, Wisconsin.

ON your Chevrolet cars that run uneven between speeds of 20-30 miles per hour, I would suggest first of all that you remove the distributor and check the vacuum and centrifugal advance on a reliable testing machine. Also I would check the pivot pin that holds the vacuum advance to the distributor to make sure there is no play in it.

I would also suggest disconnecting the reversing switch and grounding the distributor to the block. One more thing—I would install a one step richer metering rod and set the pump stroke with a pump stroke gage.

Would Two Transmissions Increase Top Speed?

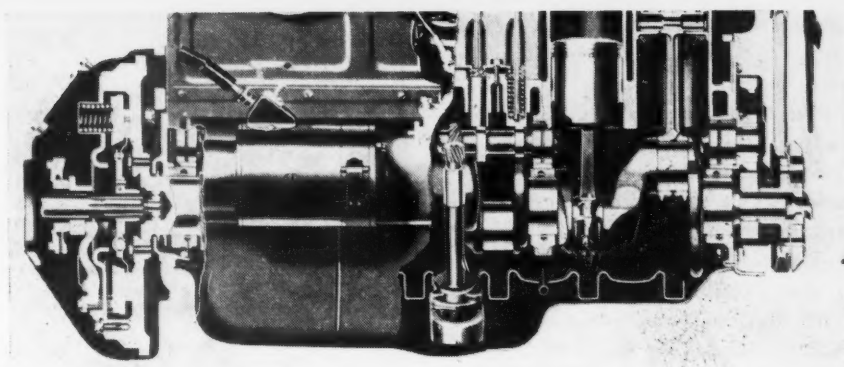
Is it possible to speed the M.P.H. of a car by putting another transmission in backwards, behind the standard transmission? If so, would it be practical on a 1935 Chevrolet?

Thank you for your kind attention. Lowell Leibbrand, Box 41, Coram, Long Island, New York.

THE answer to your question on installing a second transmission on a Chevrolet to act as an overdrive is as follows:

While it would increase your M.P.H. a little on the level and down a hill, the engine would be laboring most of the time, thus causing it to wear out rapidly.

This second transmission would have to be in second gear to act as an overdrive and that ratio wouldn't be desirable as your engine doesn't have enough horsepower to drive it. If it were possible to increase the H.P. enough to overcome this ratio then you would really gain something. In theory you have a swell idea but I wouldn't recommend doing it.



Cutaway view of 1947 Chevrolet engine

Car Continues to Knock After Complete Overhaul

Recently we bought a 1947 Chevrolet Fleetmaster with only 24,000 miles on it. This Chevrolet sounds like the rods knock. We took the pan off and took up the rods three times, the last time number 6 rod was knocked out.

We bought a new genuine Chevrolet std. crankshaft, main bearings and all new rods and installed them, but it knocked just the same. We took it apart again and installed piston expanders and new rings and it still hammered. We took it apart again and took the camshaft out. The camshaft bushings are perfect so we installed a new timing gear and the new plate on the end of the camshaft. This car is still knocking as bad as it ever did. George Suvada, Suvada Lofthus Motor Co., Colfax, Wis.

REGARDING your 1947 Chevrolet that is giving rod trouble, my suggestion is that you remove the oil pan and renew the oil lines. These lines have a habit of getting clogged and that automatically stops the oil from being sprayed to the connecting rod.

These lines can be blown out but it is best to replace them. Also they should be aimed by using a special gage supplied by the Chevrolet factory.

Transmission Grease Leaks Into Rear on '28 Chevrolet

This is a question concerning antiques, namely, a 1928 Chevrolet however, you would be surprised at the number of such Chevrolets still running in this territory.

Is there any way of stopping the transmission oil from running back to the rear end in these 1928 Chevrolets? That was a common fault, you know. Kubricky & Sperry, Harris Garage, 233 Bay St., Glens Falls, N. Y.

ON YOUR 1928 Chevrolet which is leaking grease into the rear, I would suggest you disassemble the universal joint and remove the front drive shaft busing and seal. This seal is located in back of the bushing. These bushings and seals wear and that in turn permits the grease to run back into the rear.

Chrysler Drops Down Into Third Gear from High

I have a 1941 Chrysler Royal with fluid drive that jumps out of fourth gear back into third between 30 and 60 mph.

A new vacuum cylinder diaphragm was installed, solenoid checked okay and wiring checked, but the car still jumps out. I first noticed it on a trip of about 500 miles to Canada. After going about 350 miles this jump out of gear started. It is noticed first by a thump or thud and then in about 4 or 5 seconds later it shifts itself. This only happens at odd intervals, it may go for 3 to 5 miles before it does it. The car seems to operate correctly in shifting giving 4 speeds forward, carburetor kick-down switch works okay.

Do you think it might be in the governor on the transmission? The car has roughly 44,000 miles on it.

Also after I can have this trans-
(Continued on page 52)

mission trouble corrected I am going to pull the head and possibly put in rings and bearings. Would there be any gain in acceleration and pickup by putting in new exhaust seats and installing new intake seats and grinding them at 30 degree angle? Would this angle valve and seat aid any in the mixture and exhaust flow?

What would you recommend in the way of planing down the head?

Would doing this give the car any better acceleration in fluid drive starting off in third gear? Most of my driving is in town or on short trips so I am after all the acceleration and pickup that I can get.

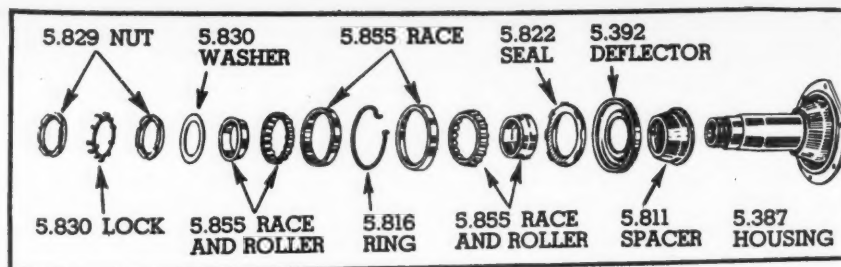
One thing more that I failed to mention, it shifts back into fourth gear after it jumps back into third by releasing the foot gas pedal. W. G. Lamb, 405 Second Street N.E., Canton 2, Ohio.

I AM inclined to believe your trouble lies in the carburetor kickdown switch. This switch is prevented from closing above a certain engine speed by action of the carburetor venturi vacuum on a small piston in the switch. If the passage becomes clogged or partially clogged, trouble such as you have outlined may take place. I would suggest removing the kickdown switch and replace the piston assembly and blow out the passage into the venturi. Also check for bare wires from the carburetor to the solenoid.

I would not recommend replacing the valve seats or changing the angle unless they are loose or badly worn. However, it would be a good idea to narrow the seats. I would recommend planing .060 in. off the cylinder.

Outer Bearing Slides Over Lock Nut On Rear Wheel

I am writing you for your information on what to do on a 1947 Chevrolet 2-ton with 2 speed rear axles. The left rear hub outer bearing slides over the lock nuts. We have tried everything we know. This has happened 4 times and always on the same side. We replaced 2 new housings and hubs, bearings and axle shafts and it still does the same. The last couple of



Exploded view of rear wheel assembly, Chevrolet, 1928-1948

breakdowns it cracked the bearing race. This truck has only 16,000 miles. Harold Wartgow, Wartgow Motor Sales, Butternut, Wisconsin.

I WOULD recommend removing this wheel once more and make a thorough check on the outer bearing and lock ring. This lock ring is most important and should be installed just right.

The inner races should be fit to the housing so that they just turn but are not loose. When installing the outer bearing, place the inner race, roller assembly, and the outer race in the wheel hub with the thin edge of the outer race downward. Press outer bearing in hub and install the snap ring in the groove on the inside of the hub. Then place a driver through the cap screw holes in the end of the hub and drive the outer race back until it touches the snap ring.

Overheating Difficulty With 1940 Dodge

Last week a gentleman with a 1940 Dodge drove in with heating trouble. He told me that he had had his car overhauled about 1000 miles ago by a very large and reliable dealer. The heating difficulty began about 200 miles from here.

This is what we did. We overhauled the radiator completely, put in a new dash heat indicator unit, adjusted the valves, replaced all hoses, replaced the spark plugs with J-8 Champions, replaced the head gasket, replaced the water distributing tube in the block, removed the three left freeze plugs and cleaned the block with wire and also reverse flushed the block. We replaced the thermostat and then removed it and blocked off the water bypass above the water pump. We checked and rechecked timing and distributor setting. We cut off the heater com-

pletely. The water pump is definitely circulating water.

The motor runs like a dream but over 35 miles per hour the water heats to 200 and above 60 it actually boils even driving two or three miles.

After each of the above operations, we road tested the car and it never improved.

We even readjusted the brakes to be sure they weren't dragging.

After four days we had to let the owner go into Mexico at 45 miles per hour. He's an old schoolteacher in Dallas who has been saving for six years to go on vacation and we used up four days of it. I'd appreciate a letter from you about this because he's due back in about two weeks and I'd like to cure his heating trouble. Edward A. Palma, Serv. Mgr., Jack Guerra Motors, Box 1418, Laredo, Tex.

IN REPLY to your recent letter regarding the 1940 Dodge that overheats. I would say this is most unusual after the thorough check you have made on it. I would suggest renewing the cylinder head as it may have a sand hole in the combustion chamber which only shows up on a hard pull. You might also check the pitch of the fan blades. Also make sure there is nothing on the front of the car obstructing the air flow. There is also the possibility of the rings or pistons having been fit too close. In this case I would try using a break-in oil.

1937 Ford 60, Recently Overhauled, Dies on Pickup

I have a 1937 V-8 Ford 60 hp. I have had new rings, main and crankshaft bearings, valves, guides and springs, new crankshaft and flywheel. Since it has been fixed it doesn't use much oil. Now my

(Continued on page 164)

Current Engine and Tune-Up Specifications

ENGINE										TUNE-UP DATA										STEERING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
MAKE AND MODEL	Wheelbase (In.)	No. of Cylinders, Bore and Stroke	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Compression Ratio	Spark Plug Make and Type	VALVES				IGNITION				Caster (Deg.)	Camber (Deg.)	Toe-In (In.)	King Pin Inclination (Deg.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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ABBREVIATIONS

- With Standard Accessories
- + Plus or Minus 1½°
- † At ½° Camber
- ‡ Depression in Camshaft Gear
- Do not recommend using a dwell meter for checking point opening

(a)—Models 61 and 62—126 in., Model 60S—133 in.

(b)—121 in. for 9FL model; 125 in. for Cosmopolitan model

(c)—Upper Ring $\frac{1}{8}$ in., Lower Ring .1600 in.

(f)—Models 25 and 27—119 in., Models 26 and 28—122 in.

(g)—Top Ring $\frac{1}{8}$; Middle Ring $\frac{3}{16}$

(k)—Auto-Lite 14 or AC104 or Champion 4A

(l)—No. 1—693; No. 2—1235

(r)—Upper $\frac{1}{8}$; Lower $\frac{3}{16}$

A—Rods removed from above

AA—Automatic Adjustment

AC—AC Spark Plug Div.

AL—The Electric Auto-Lite Corp.

AT—After Top Center

B—Rod removed from below

BT—Before Top Center

C—Cold

CC—Crankschaft and Camshaft Sprockets

CH—Champion Spark Plug Co.

CP—Crankschaft Pulley

DH—Distributor Housing

Fly—Flywheel

FVD—Flywheel

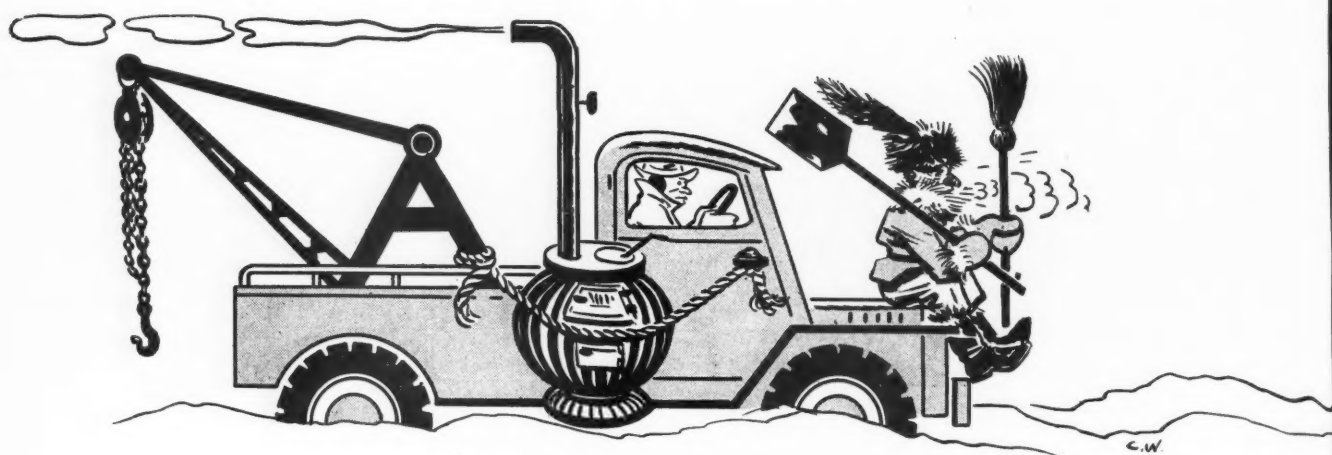
HA—Hydraulic Automatic Adjustment

TC—Top Center

TG—Timing Gears

VD—Vibration Damper

Getting the WRECKER Ready for Winter Work



The tow truck deserves priority for preparation since this is the equipment

WHEN a mechanic on a tow-in job has no crank handle for the winch, he wants a crank handle—in a hurry! He must go back to the shop and get a handle, and while he loses time, the customer loses his patience, the boss loses his temper, and maybe the mechanic loses his job. Time is money! Unnecessary trips back to the shop to pick up forgotten tools can be avoided by keeping the wrecker fully equipped at all times.

Here is a check list of the most important items of equipment to be carried on the tow

truck for winter emergency road service work.

1. A heavy wooden plank bolted on the front bumper is useful when pushing cars. It cushions the impact, won't scratch chrome bumpers and makes it easier to contact unusually high or low bumpers. A piece of wood approximately 3 in. x 15 in. x 48 in. is usually satisfactory.

2. A tow bar and a tow chain in good condition should be part of the equipment for jobs which don't require hoisting.

3. When it is necessary to lift the front end, a V bar arrangement in some form is essential.



By Arthur H. Nellen, Jr.

Assistant Editor

which literally brings in the work

Insurance companies are not sympathetic to the type of damage often incurred through towing without a V bar.

4. A good investment is a set of lug tires for use through the winter months. These will reduce the amount of driving on chains, which can be saved for the most adverse conditions. Also, don't forget to look over the skid-chains carefully. They wear out in a hurry when driven over dry roads.

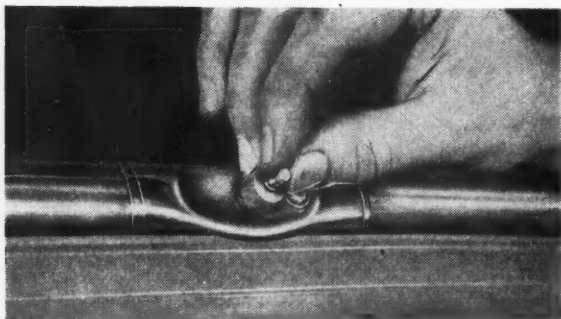
5. Two old standbys for snow and ice are a shovel and a bag of rock salt. They are well

worth the space they require, since many emergency calls come in after a heavy snowstorm, when shoveling is the only way out. Sometimes it is quicker to throw a little rock salt under the wheels of a car stuck on ice than it is to hook on a chain and pull it out with a tow truck.

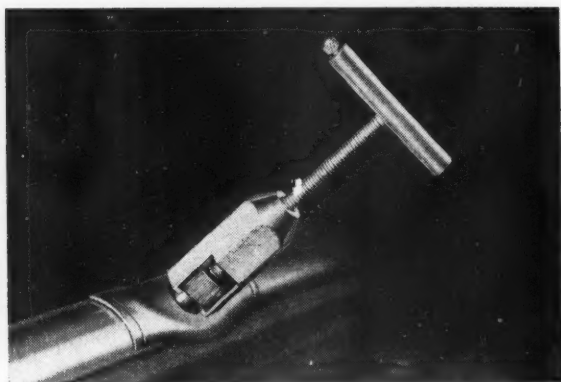
6. A fully charged booster battery and a long set of cables are "musts" on a service truck. In addition to the long jumper cables, a powerful set of alligator connections make it easier to connect them. When carrying the battery in the back of the truck, keep the ends of the cables covered with insulating material, or clip the alligator connections to a non-conductor so that there is no chance of their contacting.

7. Tools are always a problem. But no tool box should be without them. The best way to be

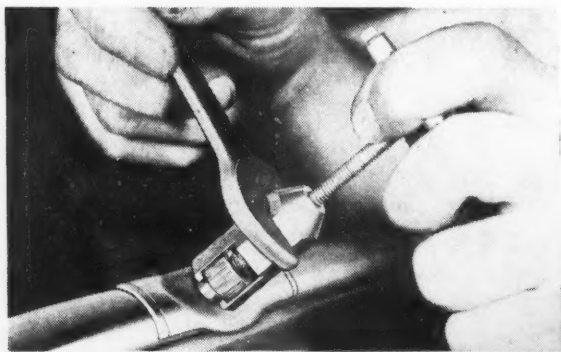
(Continued on page 122)



To remove burr, unscrew set screw from the tool (Kent-Moore No. J-2682) and thread into end of shaft.



Assemble the tool and place it in position so that the clutch end of the barrel grips the undersurface of the burr.



Holding the barrel of the tool with an end wrench, turn the handle counter-clockwise until the burr is removed.

Thread the filler strip through the eye of the Kent-Moore Tool J-2767. Insert the spreader end of the tool in the groove and push the filler into place.



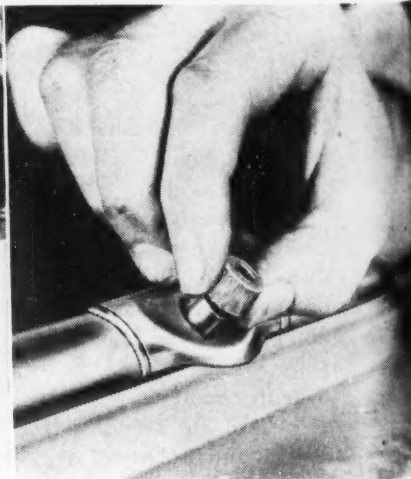
Replacing

The procedure outlined here will help

WHEN it becomes necessary to replace the Bent Safety Windshield Glass on the 1948 Oldsmobile or Cadillac, the following tools are needed, and the procedure given should be carefully followed. To remove the glass proceed as follows:

Remove the windshield wiper blade and arm. Then remove the set screw from the handle of the puller and thread it into the end of the transmission shaft. (Fig. 1.) Now assemble tool as in Fig. 2 making sure that the clutch ends grip the barrel. Hold the barrel of the tool with an end wrench and turn the handle counter clockwise until the burr disappears. (Fig. 3.) Remove the reveal moldings around the windshield. Then remove the self-sealing filler strip from the rubber moldings, lifting it at butt ends and carefully pulling the sections from the channel.

Place the new burr in its correct position on the shaft of the wiper mechanism as shown below.

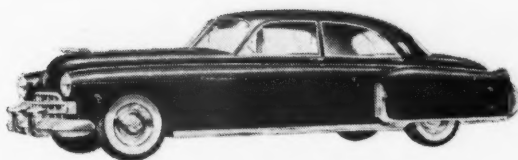


Bent Safety Windshields

in replacing the new type of windshield used on Oldsmobile and Cadillac

From inside the car push out the Bent Safety Plate Windshield. Examine the rubber channel and rubber division bar section for freedom from dirt and chips of glass, since this could crack the new glass.

To install the windshield proceed as follows from the outside of the car. Note: No sealing compound or oil should be used in the rubber glass channel at any time. To assure water tight replacement installation, it is recommended that approved sealing compound be applied to lip of rubber glass channel where it fits on a pinch weld. Do this only at area of lip where windshield wiper mechanism shaft and washer tube extend through



the rubber channel.

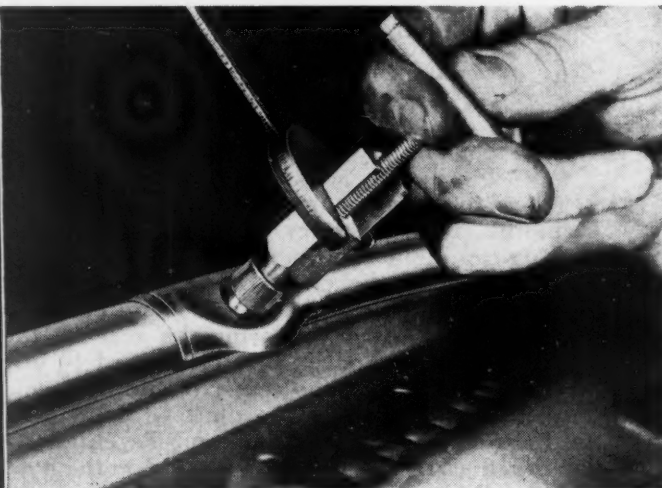
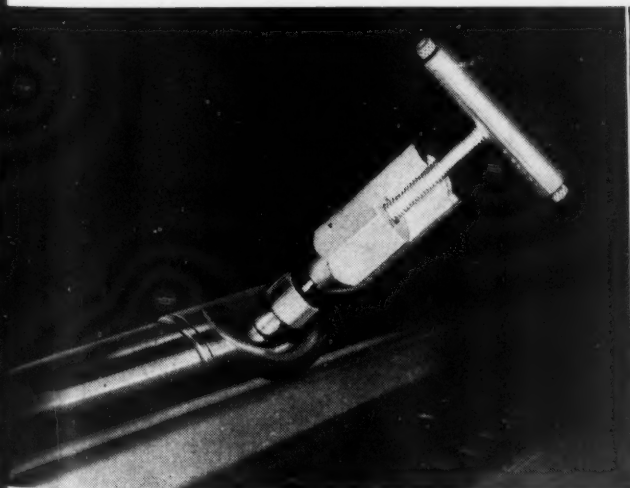
Start installing glass at the division bar section of the rubber channel. Then gradually work lip of channel, starting at either the top or bot-

tom of the division bar, over edge of glass completely around glass until firmly set. Dipping the original filler strips in a soap and water solution will make installation easier. Thread filler strip through eye of special tool in Fig. 4. Then insert the spreader end of the tool in the groove of rubber and push the tool thus sliding the filler into place. Reinstall the reveal moldings. Install a new burr or collar as the serrations on

(Continued on page 136)

Reverse the tool so the pointed end of the barrel is at bottom, and screw the pilot into the end of the shaft.

Hold the tool handle and turn the end wrench counter-clockwise until the burr pushes into position.



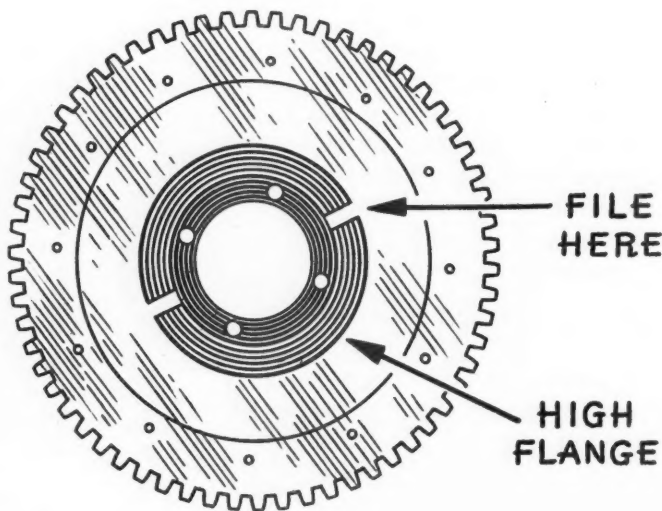
SHOP KINKS

\$★
25



**FOR THE BEST KINK
PUBLISHED EACH MONTH**

A Time-Saver for Replacing Flywheel Gears on Dodge or Plymouth Cars



When replacing a flywheel gear on a Dodge or Plymouth, it is necessary to remove the rear main bearing cap or loosen the clutch housing. We do the following: after the clutch is removed, knock the gear forward about 1/16 of an inch. The flywheel then comes off. After replacing the gear on the flywheel, file a slot about 1/32 in. deep and 1/2 in. wide on the high flange at the center of the flywheel. The flywheel can be slipped into place without loosening the housing or main bearing cap. To eliminate unbalance, file a slot on the opposite side on the flywheel.

Richard Batla, 902 Victoria St., Taylor, Texas.

Steel Wool Holds Plastic

Door Knobs on Pins

Here is a kink I have been using for a long time. When the knob on a door handle pulls off of the pin, take some steel wool and roll to about three times the size of the pin. Lap one end over the end of the pin, place hole in knob on the end of pin, put in a wire with a piece of wood between the knob and one jaw. Tighten wire forcing pin into knob and a permanent repair is the result. Also when wood screws pull out of wood, stuff the hole full of steel wool and screw will never work out or pull out.

G. A. Sparks, Service Mgr., Bent-rup-Shields, Inc., 2nd and Houston, Manhattan, Kan.

Old Chevrolet Push Rod

Makes Sludge Cleaner

To clean out the sludge from Chevrolet rocker arm shafts, it's hard to find a punch the correct diameter and long enough to go through it, so we use an old push rod from a Chevrolet. If too large in diameter, grind it a little smaller, then drive it through until it knocks out the plug on the end of the shaft. This cleans out all the sludge in one operation. The plug is easily replaced with a small hammer.—*Frank E. Shard, Shard's Service Station, 116-122 Dartmouth St., New Bedford, Massachusetts.*

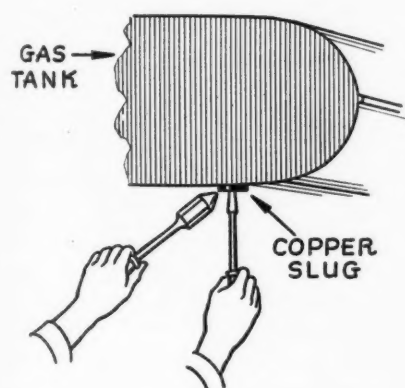


**FOR ALL KINKS
PUBLISHED EACH MONTH**

Gas Tank Leak Repaired

By Soldering Penny

Leaky gas tanks with cracks or pinholes can be quickly repaired without removing the gas tank. Drain gas out of the tank. Scrape



and clean the surface around the holes with a wire brush or scraper. Tin the surface thoroughly. Tin a penny coin and apply it with a soldering iron to the surface. When the solder flows out sufficiently between the two surfaces hold the coin with a screwdriver and remove the iron. You now have a perfect seal that is never going to rust through or crack. *William Drohomer, 317 E. 10th Street, Santa Ana, Cal.*

Stove Bolt Makes Good

Stopper For Choke Wire

Here is a shop kink that we've found to be very useful. On cars equipped with hand chokes, the

stopper at the end of the wire is sometimes lost. By taking a 3/16 stove bolt and nut we cut a slot near the threads of nut. Then put the wire in the slot and tighten the head of the stove bolt firmly against the nut. It also works on new cars where the wire unlocks the hood. *John Buhr & Sons, Route No. 1, Casco, Wis.*

Soda Straw Stops Simple

Short In Horn Wires

This is a shop kink I have used with success in repairing horn wires which have the insulation worn off at the bottom of the steering column. There is not enough room to tape this and about the only way to make a repair is to install a new horn wire. Now this is a quick repair that will last for quite a few months. Run to the drug store and grab a few soda straws. These are a good non-conductor and slip a straw over the horn wire. The short is fixed and only about five minutes' work. *R. W. Daubenspeck, Izzy's Auto Parts, P. O. Box 976 Kearns Crossing, Butler, Pa.*

Old Steering Worm Used

To Install Inner Seals

As most mechanics know, putting inner grease seals in a Ford rear housing is a job unless proper equipment is available. I use an old

Surer than the races, steadier than hitting the jackpot. The faster you write 'em, the richer you get. 25 bucks for one lucky fellow! So grab your pencil and spike at least a fin. Send along your idea—write it or draw it, anyway that we can understand it—some short cut to make a job easier or faster, some special tool you can't buy, some kink of your own. Of course, we won't accept any printed by any other publication.

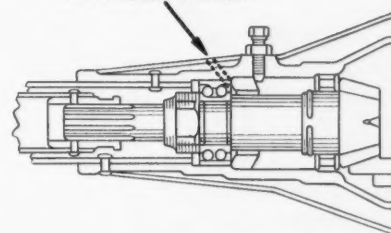
steering worm, putting water pump or fiber (preferably) grease on end of worm. Then dropping worm and seal down housing, then line up shaft with center of hole and hit with hammer. *Goro Tander, 1425 N. 16th St., Philadelphia 21, Pa.*

Short Cut on Stubborn

Chevrolet Drive Shafts

To drive out the drive shaft from Chevrolet rear ends when they won't pull, or have trouble pulling with a gear bar, or when frozen and refuse to let go, drill a 5/8 inch hole 1 1/2 inches from the front double row bearing seat just

DRILL 5/8-IN. HOLE
AND INSERT PUNCH



back of lock studs and then tap to 9/16 inch. A transmission drain plug will then fill the hole.

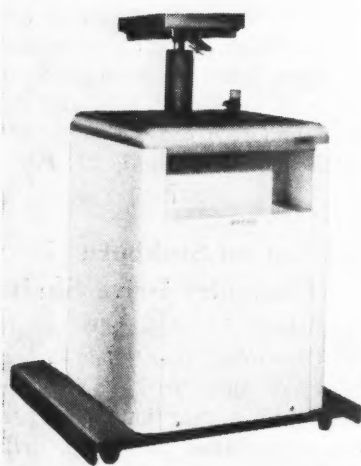
Then insert the punch through hole and take a hammer and drive out the drive shaft.

This is very simple, and saves taking out the rear end on the tough ones. *Louie Jones, c/o Bowman Motor Sales, Marquette, Iowa.*

NEW

PRODUCTS

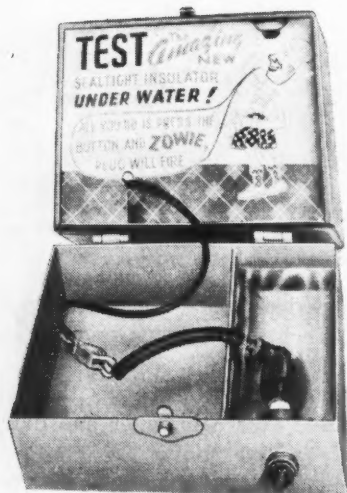
SHOW WINDOW



96

96—General Hydra-Lift

The General Automotive Tool & Equipment Co., of Grand Ledge, Mich., is announcing the Hydra-Lift, designed to increase speed and ease of transmission servicing. The Hydra-Lift holds the transmission while it is being removed and replaced with the car on either a single or twin post lift. The mechanic works in a standing position and does not lift or carry the transmission. It is fully mechanical and the lift is powered by shop air pressure and has a universal type support pan with a tilt adjustment.



97

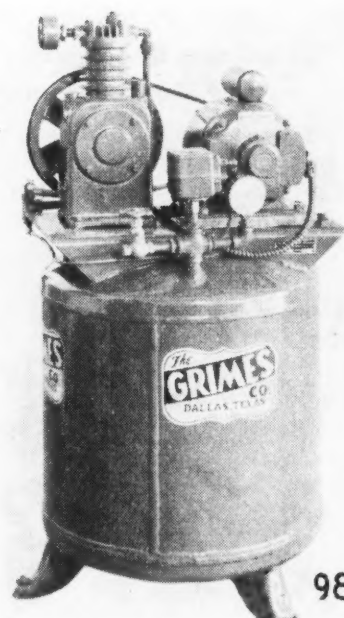
97—Demonstrator

The Sealtight Corporation, of Cedar Rapids, Iowa, now offers a new counter demonstrator which lets customers press a button and see a spark plug fire under water. The purpose of this demonstration is to help dealers close sales of Sealtight Ignition Insulators.

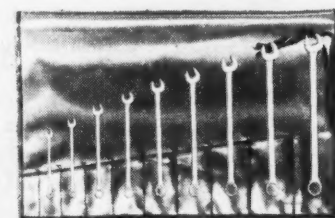
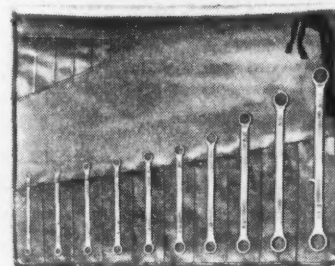
The metal container is divided into two sections, one of which is filled with water. Into this water goes a spark plug, insulated with a Sealtight. The customer just presses a button and the plug fires.

98—Vertical Compressor

The Grimes Company, Dallas, Tex., has developed a vertical air compressor. A space saving feature has been developed by designing the



98



99

FOR FURTHER INFORMATION
USE COUPON ON PAGE 62

unit with the tank upright and the motor and air compressor unit mounted on top.

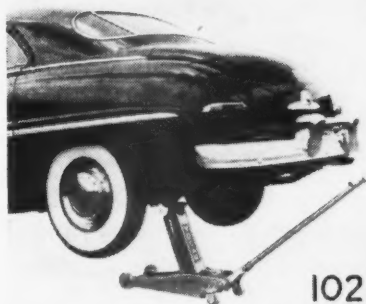
Three models have been developed. One has a 20 gallon tank with a displacement of $1\frac{1}{2}$ cubic feet per minute; the next has a 30 gallon tank and displaces 2.7 cubic feet per minute; and the largest has a 30 gallon tank, and displaces 4.07 cubic feet per minute.

99—Plomb Tools

The Plomb Tool Company, Los Angeles, Calif., have added to their line six box wrenches and nine combination box and open end wrenches with longer-than-standard lengths. Their purpose is to provide the greater leverage, holding power, clearance and reach needed on all types of mechanical assemblies. The six PROTO double-end box wrenches, with openings from $\frac{5}{16}$ in. to $\frac{3}{4}$ in., have rounded shank edges, chamfered openings on both sides, die-formed size markings, full polished heads, and triple plating. The nine PROTO combination wrenches, with openings from $\frac{1}{4}$ in. to $\frac{3}{4}$ in., have the same features as the box wrenches and in addition have tapered jaws on the open end.

100—Portable Charger

The Willard Storage Battery Co., Cleveland, Ohio, has developed a portable battery charger for emergency use. This charger, which is



not to be compared with the Willard Fast-Charger-Tester, can be moved to the location of the disabled car, and charge the battery sufficiently to get it back in service. The weight is $28\frac{1}{2}$ lb. It can be used either for quick boosts or for slow charges, currents ranging from 6 amp. to 75 amp.

101—Black Spray Gun

The Black Manufacturing Co., Baltimore, Md., announces the development of a complete, new line of medium-priced, lightweight spray equipment specifically designed for use by painters operating with a limited air supply.

First item to be released in this new series of Black Arrow products is the Model B-6900 Spray Gun.

It is designed to handle all types of material including synthetic enamels, lacquers, fillers, undercoats, varnishes, etc.

102—Two Speed Jack

The Youngstown Steel Car Corporation, Niles, Ohio, is now marketing a new automatic two speed all steel auto jack. This jack features a two speed pump. Normally, one, two or at the most three strokes raise the saddle to engagement with the load at which point the high pressure pump takes over automatically. There are no levers to manipulate. Height of jack lowered, $4\frac{1}{4}$ in.; height raised, $22\frac{3}{4}$ in. Capacity lift, 2 tons.

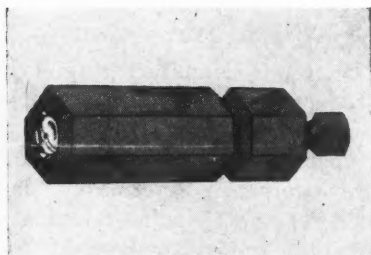
103—Rivette Fender Tool

The Rivette Mfg. Co., Phila., Pa., has developed a hand-operated fender tool for rolling out fender and body dents. This tool is said to eliminate costly tie-ups, as dents can be removed in a matter of minutes. The manufacturer states that the finish is not marred by the tool. The tool consists of a U-shaped yoke, a steel roller mounted on one end, and an articulating anvil on the opposite jaw. The roller rides the under surface of the dent while the anvil smooths the outside. Pressure is applied to the jaws by a wing nut, according to the amount desired.

(Continued on page 62)

104—Kar Brake Bleeder

Kar distributing Company, Pittsburgh, Pa., is now marketing a new device which permits an individual to bleed hydraulic brake systems



efficiently. Known as the "Kar Brake Bleeder," this unit eliminates the need for more than one person in bleeding hydraulic brake systems.

After attaching the Kar Brake Bleeder to the hydraulic systems, the manufacturer states, all that is required is for the user to pump the brake pedal until the proper pressure is obtained.

105—Bonney Wobble Drive

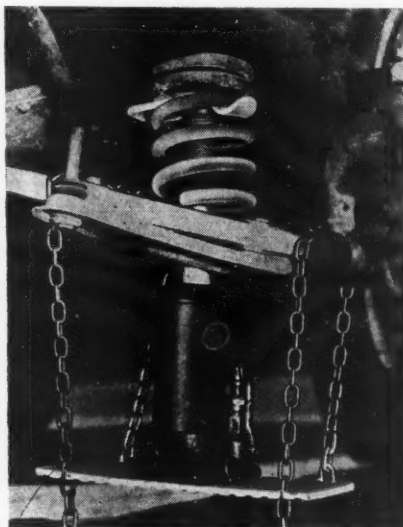
The Bonney Forge and Tool Works, Allentown, Pa., has announced a new tool called the Wobble Drive Extension, which is designed for work in close quarters. This tool enables a mechanic to obtain a small amount of swivel

and to work on a bolt or nut with the extension leaning at an angle of approximately 12° in any direction without the use of a universal joint.

The male end is a $\frac{3}{8}$ " wobble drive which will receive any $\frac{3}{8}$ " drive socket. The other end is a female $\frac{3}{8}$ " square drive for attaching a ratchet.

106—Spring Depressor

Arn-Wood Co., of Denver, Col., has developed a device for correcting normal sag in coil springs.



This unit eliminates the necessity of removing parts, the manufac-

turer states, thereby increasing usual profit on coil spacer installations.

When knee action parts are tight and coil springs are not replaced, the J D-17 Coil Spring Depressor is said to allow the mechanic to install a Jibo spacer on the bottom side of coil in only five or six minutes. The jack saddle is slotted to permit adjustment of chain length for any size jack.

107—Bumper Jack Hook

The Hein-Werner Corporation, of Waukesha, Wis., has developed a new "knuckle-joint hook" for their bumper-lift hydraulic jack.

The new hook is said to fit any bumper, regardless of make, shape or styling, on any car, as its tapered knuckle linkage shapes itself to the bumper like a hand. It also compensates for normal arc as the car is lifted.

108—Exhaust Deflector

The Richlite Manufacturing Co. of Chicago, Ill., announces the addition of two new Tubular Exhaust Deflectors including their New Jet-Chief.

The manufacturer states that the Jet-Chief is made of heavy gauge wall tubing and finished with the Richlite triple plate

109—Fuse Assortment

Littelfuse, Incorporated, Chicago 40, Illinois, is currently marketing their BY-CAR fuse assortment, all the fuses required (lights, heater,



radio accessories, etc.) for a Chevrolet in one handy inexpensive package—the same for Ford or Plymouth. Littelfuse is distributing over 75,000 multi-colored cartooned streamers to parts dealers, garages and filling stations.

(Continued on page 143)

MAIL THIS COUPON:

For further information on any of the products mentioned in Motor Age write the code number of the product in the space provided below. Don't forget your name and address.

Frank P. Tighe
MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

Code Number of New Products.....

Your Name..... Your Title.....

Your Company.....

Address..... (STREET & NO.) (CITY) (ZONE) (STATE)

NEWSCE



Ted Horn, three times holder of the National AAA Championship, was killed on Oct. 10 at the DeQuoin, Ill., Fair Ground track. During the second lap of a 100-mile AAA race a wheel spindle broke on Horn's car, and he was thrown onto the track as the car swerved into another racer.

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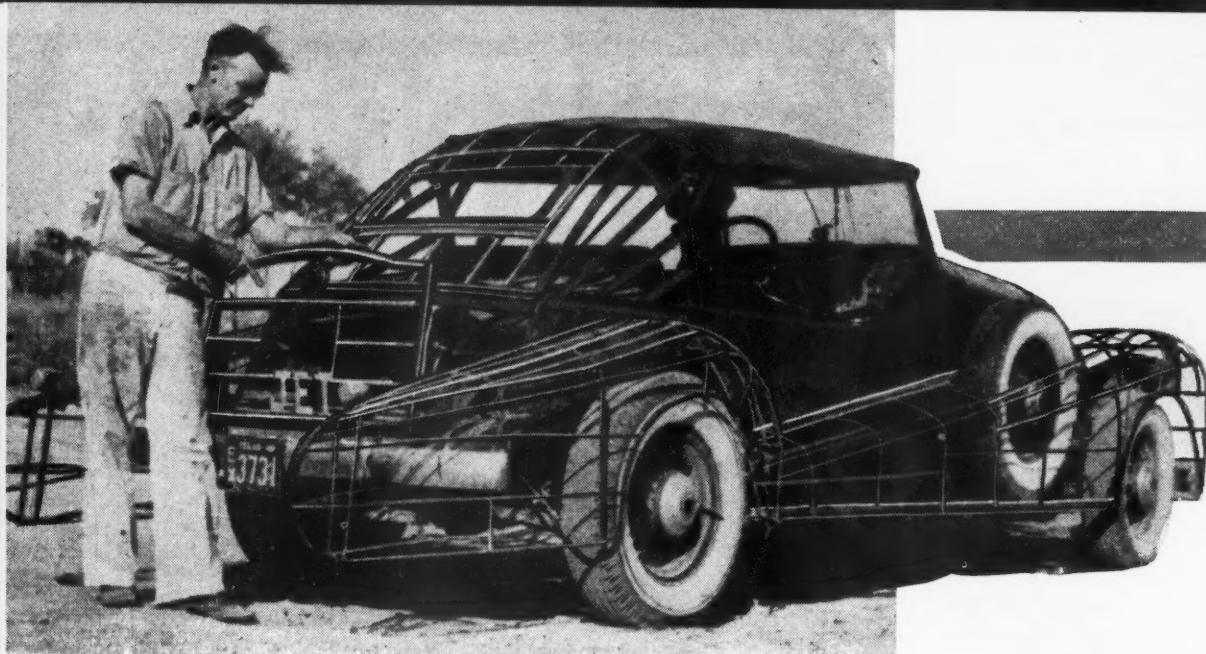
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The 1934 Packard shown at the upper left is being converted for jet-propulsion by John R. Mitchell, of Dallas, Texas. It will run on anything from kerosene to whisky, and speeds up to 140 mph are expected.



Five year old Tommy Marotta, seen at the left, received a reprimand from the long arm of the law for driving without a license. His car is a run-about, powered with a lawnmower engine, and built by his father.



In the cast of "The Three Musketeers" is Keenan Wynn, seen below, who drives his super-racer around the Hollywood lot during the production of his latest movie.



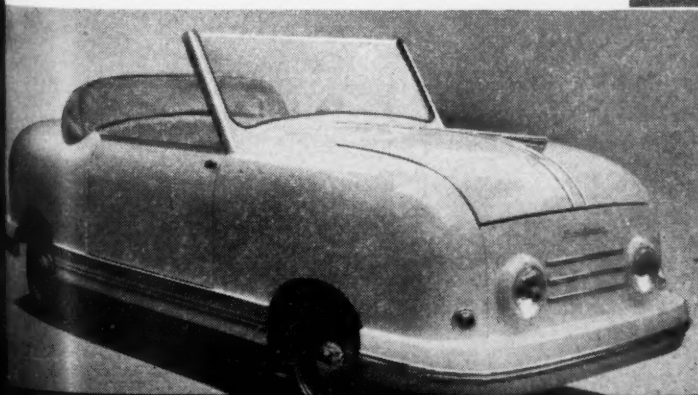
NEWSCENE

He got rammed when a throttle jammed! Mervin Futado, of San Jose, Calif., had a close call when Dave Steele, of San Francisco, couldn't slow down. Steele (in the car on its end) slid into Futado during a race at Pacheco, Calif.



The six-cylinder, 16 horsepower Mathis was one of the post-war cars shown at the Paris Salon de l'Auto. (English translation: Paris Auto Show.)

Seen too, at the Paris Auto Show was this two-seater, two-horsepower, two-cylinder Rovin runabout. One of the features of this car is the all-around built-in bumpers.



NEWSCENE

Nash Raises Prices

On All 1949 Models

Nash has raised the prices of its 1949 models an average of \$275 on the Super 600 series, and \$390 on the Super Ambassador series. The Nash line also includes a 2-door sedan for the first time since 1941.

Tucker Production Seems

More Remote Than Ever

Because production of the Tucker automobile still is in the experimental stage, NLRB has refused to conduct a bargaining election among Tucker Corporation workers. The board said that presently there are only 190 employees at the Tucker plant, compared with a previous estimate that nearly 2200 would be working at this time and more than 9300 by next April. The board said further "There is a substantial degree of uncertainty as to whether the employer will successfully overcome initial difficulties and embark upon the production of automobiles on the scale contemplated."

Buick Will Have Dynaflow

As Standard Equipment

The 1949 Buick (scheduled for introduction late this month) will include Dynaflow transmission as standard equipment on all Roadmaster series 70 1949 models. At the same time the Dynaflow will be offered as optional equipment on the Super 50 series. It is said to be a new unit specifically designed to the characteristics of the engine used in the Super series. The 40 Special series is not slated to be changed for the present. A new body for the Special is under development but will not be ready until some time next year. As a result, there will be a period of possibly several months when the 40 Special will not be available.

Chrysler Opens First

Eastern Parts Plant

Fourteen states will be served by the huge Newark, Delaware, parts distributing center which was formally opened recently by the Parts

Division of Chrysler Corporation.

The huge building includes nearly 16 acres of floor space, with facilities for handling and shipping Mo-Par replacement parts for Plymouth, Dodge, De Soto and Chrysler vehicles and Chrysler Industrial and Marine engines.

This plant will serve dealers on the Atlantic slope from the New England States to the Carolinas.

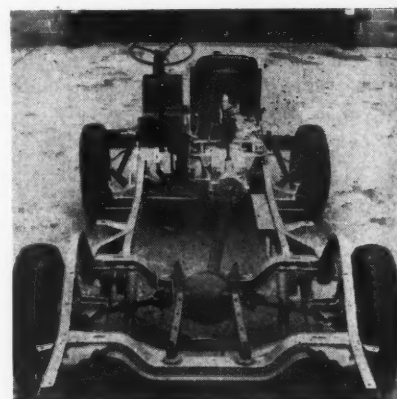
Other parts distributing centers are maintained by the corporation on the Pacific Coast, Illinois, Michigan, Georgia for the old South, and Kansas for the Mid-continent.

The Wilmington area was chosen for the new Eastern plant because of its central geographical location and the high-speed shipping facilities reaching the 14 states which will be served.

New Dodge Truck Features

Fluid Drive, Two Rear Axles

The Dodge Division of the Chrysler Corporation has announced a new type of vehicle for frequent stop delivery service. This truck, called the Dodge Route-Van, features fluid drive, two rear axles—



one to support the load and one to move the load, a differential assembly mounted on the chassis frame and connected to the wheels by open-type axle shafts, and an electro-hydraulic brake holder.

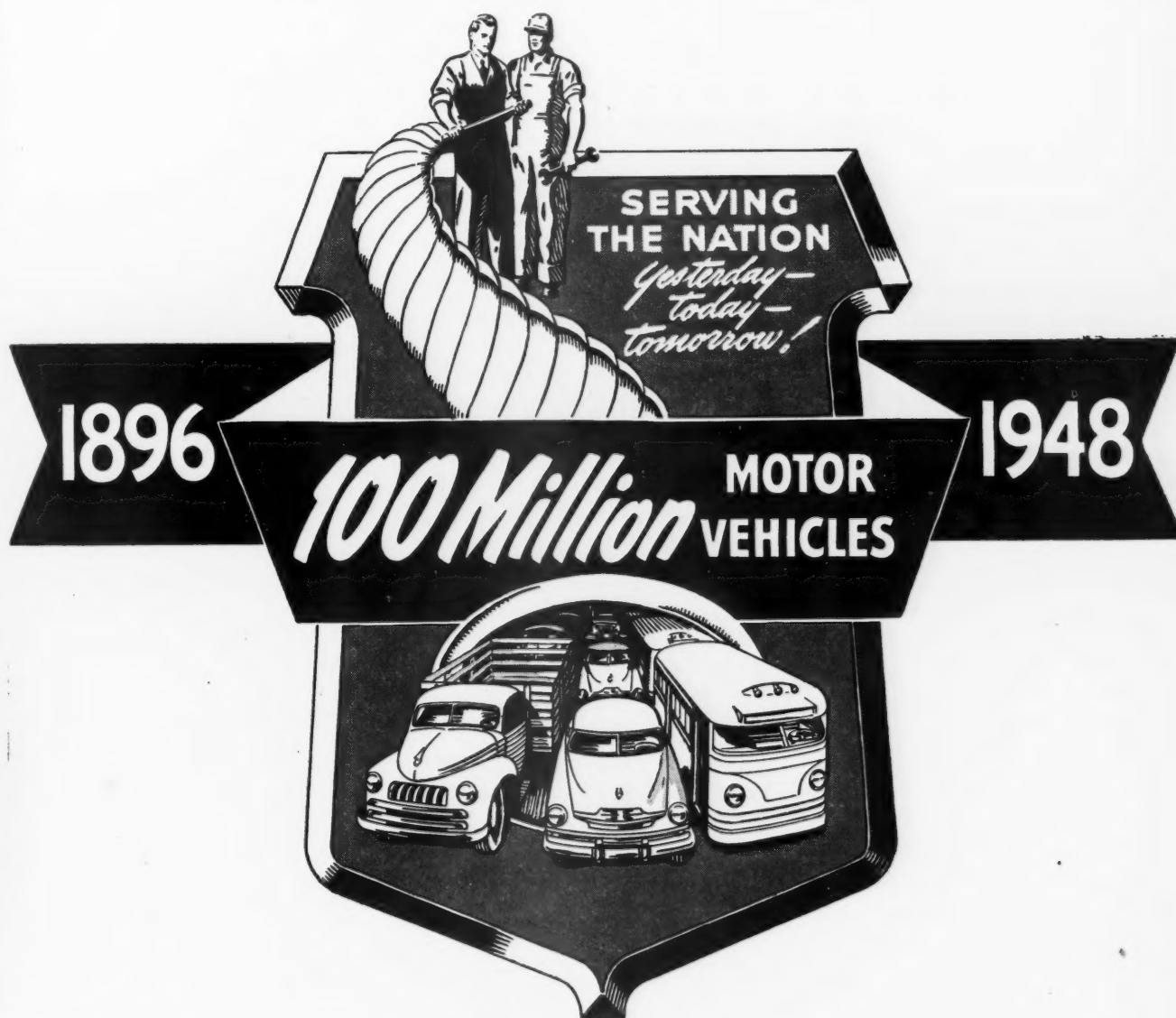
This door-to-door delivery truck is the first truck in volume production in the United States to offer fluid drive. The fluid drive unit consists of two circular members, each containing a series of vanes or paddles. These members face each other in a sealed housing which is

(Continued on page 166)

Three new Willys-Overland models introduced recently are left to right: the Jeep Utility Wagon, simplified adaptation of the station wagon for light hauling use; four-wheel-drive Station Wagon, for traveling rough terrain, heretofore inaccessible to ordinary vehicles; six-cylinder Station Wagon, version of the famous Jeep Station Wagon in solid color, powered by the new Willys-Overland 6-cylinder engine.



*The Automobile Industry
Takes Pride
in its Achievements*



Studebaker

builder of highway transportation for over
96 years takes pride in being part
of that industry

1949 Frazer Features

Increase in Horsepower

The Kaiser-Frazer Corporation recently announced the 1949 Frazer and Frazer Manhattan sedans. Among the features of the new models are increased horsepower, dual throat carburetion, simplified clutch linkage, and new interior and exterior styling.

The horsepower is said to have been increased by 12 per cent without any loss in fuel economy by the use of dual throat carburetion and dual intake manifold. The compression ratio is 7.3 to 1. A new clutch mechanism eliminates 52 parts and reduces the number of parts in the linkage to 16.

The new exterior styling includes a "honeycomb" grille, wide chrome trim along the base of the body, longer skirted body panels, and the addition of a chrome "crease molding" which extends the length of the car below the window openings.

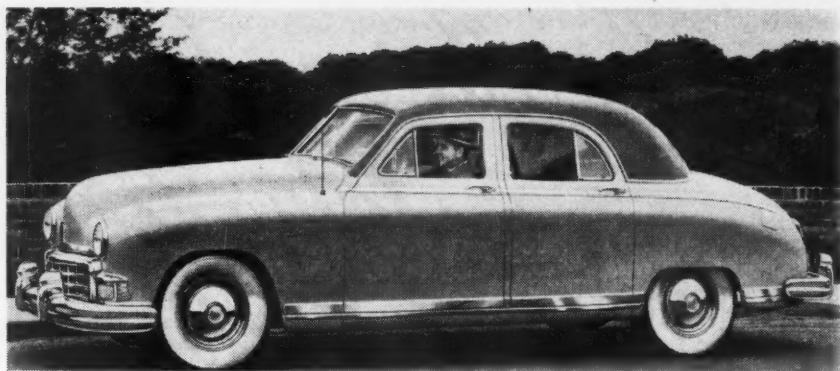
The interiors, which have been completely redesigned, feature a new instrument panel with clustered dials, multi-coil foam rubber cushions, chrome hardware, and a Manhattan selection of 18 interior fabrics (in combination with 16 body colors) with a total of 23 such combinations on the Frazer.

Automatic overdrive, which cuts engine revolutions 30 per cent at speeds over 28 miles per hour, is available on all models, and power operated window controls are available on the Manhattan.

Automotive Advertisers Issue Handbook for Wholesalers

The automotive wholesaler, together with the whole automotive service industry, is definitely becoming more merchandising and advertising minded and is making increasing use of modern selling tools to promote its interests, it was pointed out at the fall meeting of the Automotive Advertisers Council. To further aid in promoting this trend, the issuance of a new advertising handbook for use by automotive wholesalers was approved by the Council at the sessions.

(Continued on page 170)



The 1949 Frazer Manhattan sedan.

RFC Puts \$3.5 Million Into Cold Rubber Plants

The government is getting behind the production of "cold rubber" which is said to give up to 30 per cent greater tread wear in tires. RFC is planning to put \$3.5 million into an expansion program at government owned rubber plants managed by private companies. Currently production of cold rubber is about 21,000 tons a year which is expected to rise to more than 180,000 tons annually when the program is completed.

Replacement Parts Needed For 32 Million Cars

Record replacement parts business since the end of the war provides the answer to the present all-time high of 32½ million cars in

use in the United States today. AMA estimates that about 14 million cars which are more than 10 years old and which normally would have been scrapped still are in existence far beyond the average time they would have been junked before the war. In addition, 2 million cars are 15 years or more old. Of the 32½ million total passenger cars, about 8 million have been built since the end of the war and by the end of this year it is estimated that total postwar cars will number about 9 million. Average age of cars has dropped slightly from 9 years in 1946 to about 8.7 years. The replacement parts output last year totaled \$2.3 billion wholesale value, or about 30 per cent of the \$5.6 billion value of all motor vehicles built in the United States last year.

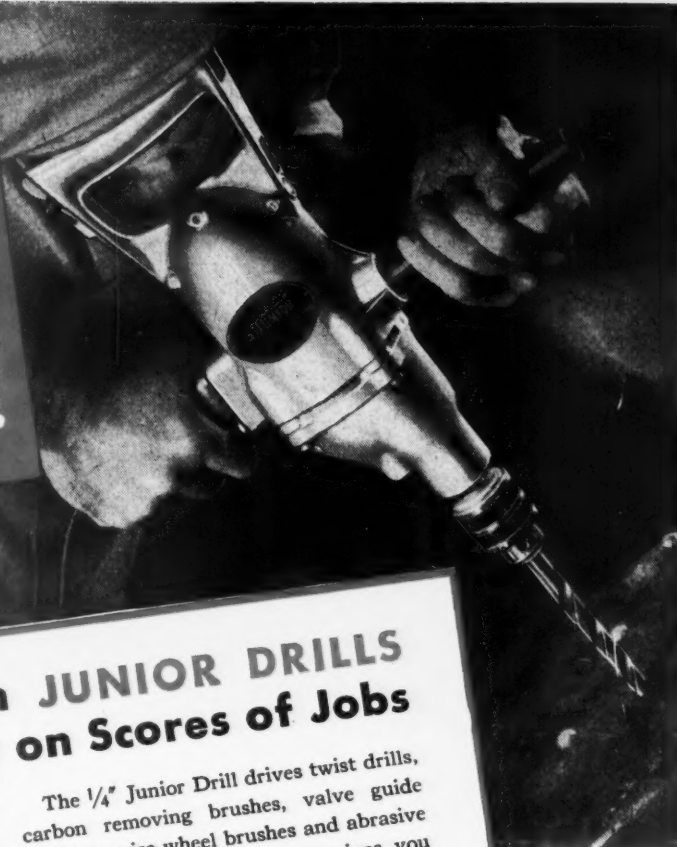
NEW PASSENGER CAR REGISTRATIONS*

Arranged by Makes in Descending Order According to the Eight Months' 1948 Totals.

MAKE	EIGHT MONTHS							
	August 1948	July 1948	August 1947	Units		Per Cent of Total		
				1948	1947	1948	1947	
Chevrolet.....	61,509	51,321	53,459	470,443	429,421	20.65	20.82	
Ford.....	41,589	39,104	42,082	257,091	337,201	11.28	16.35	
Plymouth.....	36,149	31,649	27,284	225,353	206,637	9.89	10.02	
Buick.....	21,804	18,585	19,995	166,996	154,774	7.33	7.50	
Pontiac.....	19,310	16,127	16,242	152,961	136,786	6.71	6.63	
Dodge.....	20,807	19,163	19,720	144,137	134,943	6.33	6.54	
Oldsmobile.....	16,133	13,734	14,285	121,371	119,576	5.33	5.80	
Studebaker.....	11,511	13,231	7,521	97,677	67,221	4.29	3.26	
Nash.....	10,867	9,735	8,201	82,221	70,416	3.61	3.41	
Mercury.....	14,684	13,068	6,881	78,857	68,937	3.46	3.34	
Kaiser.....	11,645	10,685	5,602	78,229	28,352	3.43	1.37	
Hudson.....	7,795	10,497	8,672	77,300	67,768	3.39	3.29	
Chrysler.....	10,532	9,785	8,604	70,795	60,918	3.11	2.95	
De Soto.....	8,192	7,224	6,740	54,505	46,761	2.39	2.27	
Packard.....	7,262	7,380	4,331	52,801	29,341	2.32	1.42	
Frazer.....	3,312	5,407	5,571	45,011	26,690	1.98	1.29	
Cadillac.....	6,088	5,169	4,612	38,644	34,808	1.70	1.69	
Crosley.....	2,747	2,680	1,387	18,908	10,171	.83	.49	
Lincoln.....	2,810	3,987	1,564	18,817	16,056	.83	.78	
Willys.....	645	754	2,025	15,120	15,623	.66	.76	
Austin.....	1,002	1,012	.....	6,515	.....	.29	.....
British Ford.....	597	337	.....	1,234	.....	.05	.....
Playboy.....	14	11	.....	47	.....	.....	.....
Tucker.....	1	.....	.....	2	.....	.....	.....
All Others.....	783	601	88	3,467	551	.14	.03	
Total.....	317,788	291,206	264,866	2,273,522	2,062,951	100.00	100.00	

* Data from R. L. Polk & Co.

TOPS for SHOPS
doing
ODD-JOB DRILLING!



Famous Van Dorn JUNIOR DRILLS
Save Time, Money on Scores of Jobs

Drilling out broken bolts — removing engine carbon — installing accessories — there are a 100-and-1 intermittent body and engine jobs where Van Dorn Junior Drills will speed up your work! They're "tailor-made" for shops that need a good, low-priced Drill for intermittent service. And they have many quality features—typical of Van Dorn—that you'd never expect to find in low-priced Drills.

The 1/4" Junior Drill drives twist drills, carbon removing brushes, valve guide cleaners, wire wheel brushes and abrasive attachments. The 1/2" Junior gives you extra chuck capacity and drives Hole Saws up to 3 1/2" diam. Ask your nearby Van Dorn Distributor for a demonstration. Write for free catalog to: The Van Dorn Electric Tool Co., 727 Joppa Road, Towson 4, Maryland.

Van Dorn
1/4" Junior
Electric Drill
\$28.00

Van Dorn
1/2" Junior
Electric Drill
\$45.00

**FOR POWER
SPECIFY**

"Van Dorn"

(DIV. OF BLACK & DECKER MFG. CO.)

PORTABLE ELECTRIC TOOLS

**Features You'd Never Expect
to Find in Low-Priced Drills!**

- ✓ Full-power Van Dorn-built universal motor
- ✓ "Compo" oil-less bearings for smooth running
- ✓ Compact, balanced design for easier handling
- ✓ Husky, light-weight housings





MOTOR AGE FLAT RATE AND SERVICE MANUAL DEPARTMENT



Profitable Winter Service

*Cars which will start readily in cold weather
please customers and produce pleasing profits*

by **Andrew D. Grey**
Editor, Flat Rate Manual

Charge the customer:	\$6.00 labor
Time required:	Approximately 2 hrs.
Parts sales:	Ignition contact points set Condenser Anti-freeze Battery Battery cables Ignition cables Coil Fan belt Radiator hose Generator regulator Starter switch Starter solenoid
Possible additional parts sales:	

ONE of the most satisfactory flat rate jobs which can be performed on a customer's car is getting it ready for quick, positive starts in cold weather. This is purely a winterizing job, not a tune-up.

Here's what to do:

Start at the battery. Make both a hydrometer and discharge test. Low voltage on any cell during a discharge test indicates a new battery will probably be required before the winter is over. Best install one right away.

If the battery is O.K., thoroughly clean the terminal posts. Scrape them so they are bright and shiny. Clean and scrape the battery cables until they are bright at the ends where they connect to the battery, switch and ground. Scrape the frame where the battery ground cable connects.

Starter switch: Remove and disassemble the switch, clean and polish the contacts. If the pits

or burns in the contacts are so deep that going over lightly with a file doesn't level them, install a new switch.

Starting motor: Remove and disassemble the starter, pay particular attention to the brushes and commutator. Clean the commutator and free up the brushes. You're shooting for a clean free turning starter and good brush contact. Make sure the starter gear slides freely along the shaft.

On practically every car the current used for all parts of the car (except the starter) comes from a single lead which connects to the battery side of the starter switch and runs up to the ammeter. Clean the contact at both ends of this wire, and make sure the contacts on the other ammeter post are clean and tight.

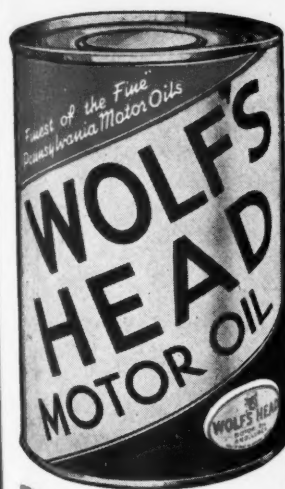
Distributor: Install new parts and condenser and check the ignition wires for drying out, cracks, or poor insulation. Bend the spark plug

(Continued on page 134)

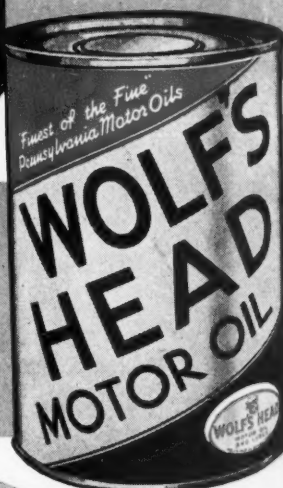
If he wants to know why ...
you can reply

WOLF'S HEAD

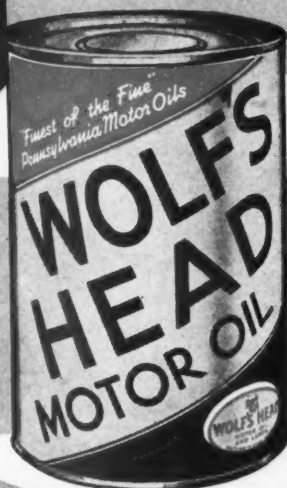
IS THREE STEPS AHEAD



**EXPERTLY CONTROLLED
DEWAXING**
keeps Wolf's Head free-flowing
even in cold weather.



DOUBLE DISTILLING
makes Wolf's Head richer,
tougher, more heat resistant.



TRIPLE FILTERING
removes all free carbon and other
troublesome impurities.

Here's a real way to boost your sales. Tell every customer why Wolf's Head is better. Tell them that the refining process of Wolf's Head Motor Oil is carried *three steps further* than that of ordinary oils. And explain that Wolf's Head . . . 100% pure Pennsylvania, premium grade . . . is a superior refinement of only the finest

Pennsylvania crude. Once you make it clear that there's a big difference between Wolf's Head and ordinary oils, you've found the quickest way we know of to get your customers to ask you for Wolf's Head . . . every time they need oil. Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

100% Pure Pennsylvania—"Premium Grade"



P.G.C.O.A. Permit No. 6

briefly. In the first place there is the shift to a relatively large bore—3 13/16 in. as compared with 3 1/2 in.—and a shorter stroke—3 5/8 in. as compared with 4 1/2 in. This has increased efficiency by exposing about 12 per cent less cylinder area to the flame. At the same time the shorter stroke tends to reduce friction losses by cutting

piston travel about 20 per cent. More specifically, at around 4000 rpm piston travel is only 2400 fpm as compared with 3000 fpm previously.

Entering into this picture is the adoption of a slipper type aluminum alloy piston which permits the use of an unusually short connecting rod, almost two-inches

shorter than before. This piston design not only aids in reducing friction losses but is responsible for a reduction in reciprocating weight.

The valve-in-head mechanism incorporates the new hydraulic valve

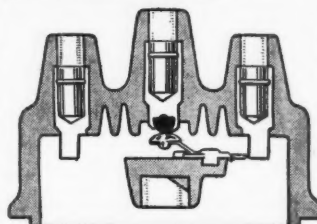
PEEDEE shows you why you get TOP PERFORMANCE with these DISTRIBUTOR CAPS and ROTORS

Here's a cap that caps 'em all. Examine the heavy plastic molded side walls and top. They give you maximum dielectric strength, minimum water absorption and highest arc resisting or carbon tracking qualities.

Now, see how the solid brass inserts are molded directly into the plastic and supported against the walls to prevent loosening. Notice the careful way the cap is precision machined to assure uniform performance from all cylinders.

And see how the rotor segments are die-stamped to keep an equal clearance between cap and all inserts.

This is just one sample of the high quality materials and skilled workmanship that go into all genuine P&D starting, lighting and ignition replacement parts. Write today and we will send you a copy of Catalog No. 47 which gives full information on how you can make more money with this line.



Turn Out Better Tune-up Jobs With P&D

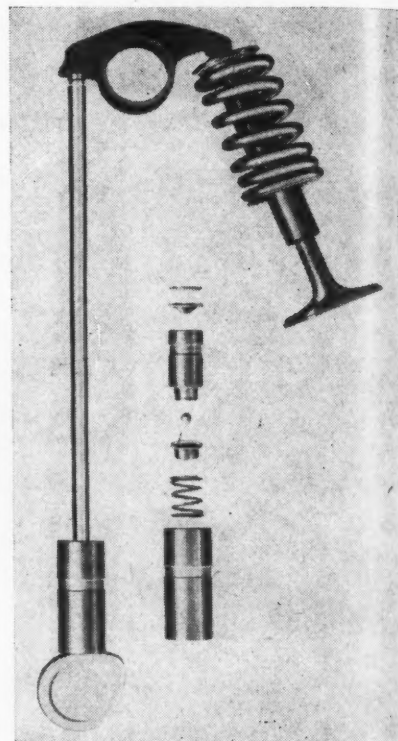


P&D

MANUFACTURING COMPANY, INC.

LONG ISLAND CITY 5, N. Y.

STARTING • LIGHTING • IGNITION



An exploded view of the new hydraulic lifter.

lifters to assure quietness and efficient operation. The new engine dispenses with an oil filter, relying upon the design of the lubrication system and the Floto-type oil level screen for oil clarity.

The combustion chamber follows advanced principles to promote better combustion and combustion control. One advantage of this type of chamber is that it has about 10 per cent less area than on the L-head engine, thus reducing heat loss with increased compression ratios. Because control of form and size are exceedingly important, the combustion chamber is machined all over. The combustion chamber also allows more room for large valves. The spark plugs are of 14 mm size instead of the 10 mm plugs used before.

With its increased thermal efficiency the engine loses about 20 per cent less heat at 70 mph and this is reflected in a reduction both in size and weight of the radiator.

(Continued on page 74)

This Christmas give your men **Snap-on Tools**

... THESE FINER TOOLS WILL HELP
THEM DO A BETTER JOB!

Make this year's Christmas Gift or Bonus to your men a set of Snap-ons! It's a gift they want... a gift that will help them do a better job, faster! You'll find that every man in your shop knows and appreciates the excellent quality of these tools. Give Snap-ons... your men will appreciate your thoughtfulness!



TOOLS MAY BE EXCHANGED

If the tools you give are duplicates of those your men already have, Snap-on will exchange them on a dollar-for-dollar basis.



LARGE, ROOMY SNAP-ON TOOL CHEST

26" wide, 12" deep and 14" high. All drawers fitted with "no-spill" slide runs. Plenty of room for long wrenches and hand tools.

39⁹⁵



DWARF BOXOCKET SET

They're strong! Short handles let you work in close places. Openings range from $\frac{3}{16}$ " to $\frac{3}{4}$ ". Complete in kit bag.

7⁸⁰

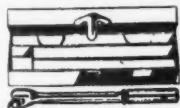
SNAP-ON SHORT OPEN-END WRENCH SET

Forged from special alloy steel to withstand tough usage. Precision machined heads. Two sizes on each wrench; complete range from $\frac{3}{16}$ " to $\frac{3}{4}$ ".

39⁹⁵

Give a Snap-on Gift Certificate

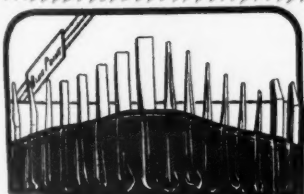
If you would rather not select the tools yourself, give this Gift Certificate (any denomination) and let the men select the tools they want!



SNAP-ON MIDGET BASIC SET

This basic set consists of a nut-runner and nine standard hexagon sockets plus three square sockets with $\frac{1}{4}$ " drive. In metal box.

8⁵⁰



SNAP-ON "SUPREME" CHISEL AND PUNCH SET

A complete 16-piece set that will do almost every punch and

chisel job. You have the right tool for every job. Complete in kit bag.

15⁰⁰

0 TO 150 FOOT-POUND TORQOMETER

Eliminates guesswork on bolt tensioning and helps to avoid doing jobs over. There is no mechanical distortion when your men use a Snap-on Torqometer.

16⁹⁰

21-PIECE STANDARD SNAP-ON FERRET SET

This carefully selected assortment provides basic handle equipment and the 13 sockets needed for most nut-turning jobs in the $\frac{3}{8}$ " sq. drive size range.

27⁹⁵

SNAP-ON TOOLS CORPORATION

8036-K 28th Ave., Kenosha, Wisconsin
Please send me these tools:

.....
.....
.....
(How Many) (Name of tool or set)
☐ Have representative call
Name.....
Address.....
City..... State.....

SNAP-ON TOOLS CORPORATION • 8036-K 28th Avenue, Kenosha, Wis.

It is now only three rows of tubes deep—instead of four—and weight has been reduced by about 15 lb.

The dual down-draft carburetor with a newly designed one-piece manifold is centered between the cylinder heads and arranged for uniform distribution of the mixture. The manifold has shorter, larger passages to facilitate free

flow of the mixture. At the same time the oil bath air cleaner provides enlarged intake capacity.

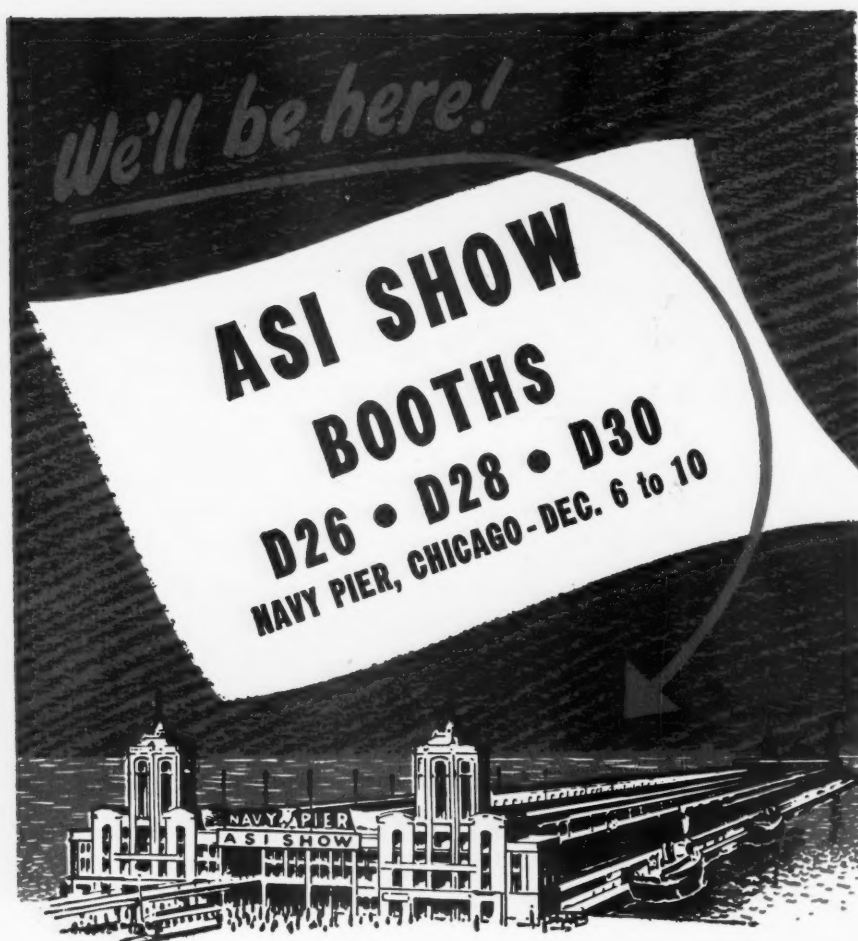
Although it has been assumed that heavier structures are necessary to take care of the greater loading due to extremely high compression ratios, Cadillac has altered the picture materially by reducing the size and weight of highly

stressed parts such as the rod and by suitable improvements in other directions. For example, the new crankshaft has been redesigned for five main bearings instead of three. It is shorter, lighter, and more rigid torsionally than the previous design. At the same time the lower end of the crankcase has been strengthened by the introduction of heavy ribbed bulkheads.

Most of the weight reduction has been effected through a reduction in cast iron. The cylinder block is lighter because of the new design and shorter cylinder bores. Also, the upper section of the flywheel housing is a part of the crankcase upper structure.

Among other details are the adoption of a flame-hardened steel camshaft sprocket in the timing chain drive and use of a very narrow timing chain; a single belt drive of narrow wedge type for all accessories; adoption of the embossed steel head gasket; and use of the new Delco distributor which incorporates a radio interference suppressor in the rotor. Another feature of the new distributor is the tapered driving end which fits into the slot of the distributor drive gear mounted at the camshaft. This gear and hub is cast in one piece of the same alloy cast iron material as is used for the camshaft, the gear being of large

(Continued on page 76)



Visit our booth and see the PAR AIR COMPRESSOR LINE for '49

By Comparison — You'll Buy PAR
LYNCH CORPORATION
Par Compressor Division TOLEDO 1, OHIO U.S.A.



"You've been working too hard, Jim.
Lie down and work under the car for
a while!"

*Extra Starting Power!
Extra Long Life!
Extra Dependable!*



MOPAR Power Line BATTERIES

Car owners who have 'em—like 'em!

That's because MOPAR Power Line Batteries can give and take. They can give that long-life, dependable power because their sturdy, tough construction enables them to take long, hard service.

And here's still another reason why more and more owners are making MOPAR Power Line Batteries first choice. These powerful, rugged replacement batteries are designed by Chrysler Corporation engineers, are

made solely for Chrysler Corporation—Parts Division, and are distributed exclusively through Plymouth, Dodge, DeSoto and Chrysler dealers.

To owners of cars and trucks built by Chrysler Corporation this means added assurance of top quality and performance.

Plan now to boost *your* battery business! Recommend and install dependable MOPAR Power Line Batteries.

CHRYSLER CORPORATION • PARTS DIVISION • DETROIT 31, MICHIGAN



Here's where to go for MOPAR Power Line Batteries

You can get MOPAR Power Line Batteries from your nearest Plymouth, Dodge, DeSoto or Chrysler dealer.



*Approved by
Chrysler Corporation
Engineers for...*

**PLYMOUTH • DODGE
DE SOTO • CHRYSLER CARS
DODGE "Job-Rated" TRUCKS**

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Jim.
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1948

diameter to promote durability. The tapered connection is said to be effective in eliminating backlash at this point.

From a service standpoint the new engine is said to be superior in affording accessibility, particularly with respect to accessories. For example, the generator is mounted high on the right side of

the block. The carburetor is at the top center; the fuel pump is at the front over the block. The ignition distributor and coil are mounted close together at the top rear end.

The development of a one-piece casting combining the water pump housing, and inlet and outlet water manifolds eliminates all of the usual hose connections except those

running to the lower and upper radiator tanks. Coolant is circulated by the pump from the bottom of the radiator to the lower manifold, through cylinder block and cylinder head water jackets and out through the upper manifold to the top radiator tank. A by-pass in the casting between the upper and lower manifolds permits the coolant to recirculate through the cylinder block and heads until the proper temperature has been reached and the thermostat valve is opened.

With this powerplant some detail changes have been effected in the Hydramatic drive. For one thing, the flywheel is lighter than before. In addition the fluid coupling has been altered to effect an increase in torque capacity. The throttle valve control linkage to the Hydramatic unit now consists only of a single rod without any other joints or connections.

So far as the chassis is concerned Cadillac has made many detail improvements and changes. For one thing the ride has been improved by the process of rebalancing the car now that there has been a shift in weight distribution, less weight at the front end in this case. The change in weight distribution has made it necessary to increase braking at the rear, so the rear brake shoes and linings are 1/4-in. wider than before.

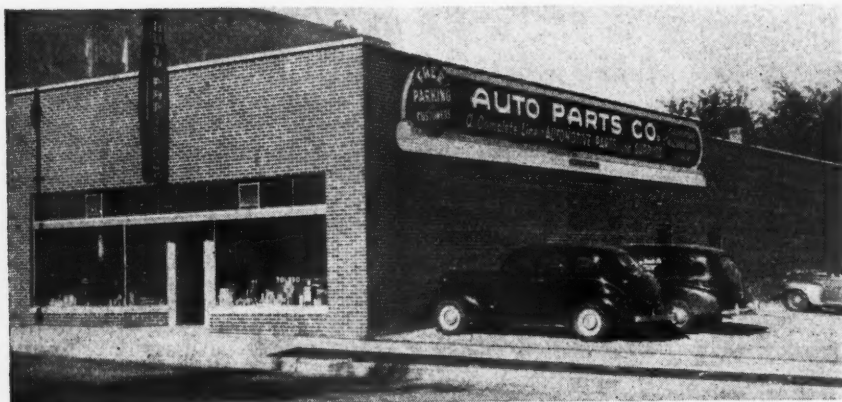
An important change in the rear axle is found in the adoption of axle shafts with the flanged end integral. At the same time the wheel bearings have been moved closer to the hub.



"Grizzly combines performance with profit!"

says Herbert White and Claude Wilson,
Owners, Auto Parts Company,
Independence, Missouri

"When we formed our business in 1935," said Herbert White and Claude Wilson, "we decided to handle Grizzly Brake Lining, because we believed Grizzly to be a quality product that offered excellent profit possibilities to our dealers as well as ourselves. The result has been most gratifying for the past 13 years. Our Dealer and Fleet accounts have nothing but praise for Grizzly's proper shoe contact; quicker, smoother, soft-pedal stops; and freedom from adjustment. Superior performance like this, plus Grizzly's national advertising support, is building profits for our dealers and consequently, for us!"



DEALERS: Auto Parts Company is typical of the many Grizzly Distributors who handle Grizzly Brake Lining exclusively . . . who profit with Grizzly because their dealers are making money and building car owner good will through Grizzly's performance. There's a Grizzly Distributor near you—see him today and learn how Grizzly can increase your brake lining profits! Grizzly Manufacturing Company, Paulding, Ohio.



BEAR IN MIND ... ASK FOR

GRIZZLY
REG. U.S. PAT. OFF.
BRAKE LINING

SYNCRO SETS • SAFTIBOND • HEAVY DUTY BLOCKS
HYDRAULIC BRAKE FLUID • HYDRAULIC BRAKE PARTS



"Notice the powerful horn!"

HOW TO SELL THE MAN BEHIND THE WHEEL

A series of Suggestions by

Lyon

DON'T SCATTER YOUR SHOTS...

Sell him

...WHEN HE'LL LISTEN!

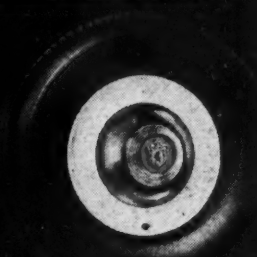
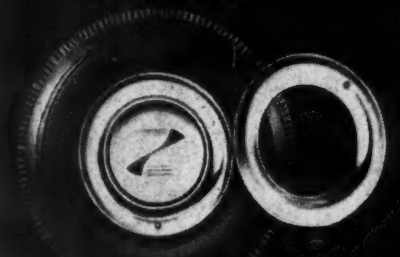
You can't sell wheel accessories to everybody, that's for sure. Smart dealers pick their spots. The best time to sell is when a man takes time to listen; when you apply new tires, for instance, or when he has one repaired. That's the time to hold a Lyon accessory up to his wheel, show how it improves its appearance, point out how easy it is to install and keep clean. We know this will work if you do it consistently because many dealers practice it regularly and report fine results. Lyon suggests you try it because it's sound selling. Lyon Inc., 13881 W. Chicago Blvd., Detroit 28, Michigan. All products shown are Fair Traded.

THE WHITEWALL

DELUXE WHEELCOVER

THE WHEELWALL

COMBINATION WHEELCOVER



that holds the idler and counter shaft gear in place in the case. Using an arbor cut to the exact length of the cluster gears, drive the counter shaft out from front to rear. The arbor and gears will drop to the bottom of the transmission allowing room for the main drive gear to be removed. The main drive gear can be re-

moved by using a soft drift, driving it out from the inside of the transmission. After removing the main drive gear assembly, move the mainshaft as far away from the shift fork and shifter shoe as possible. Fig. 3. Then lift out the assembly through the rear of the case, while disengaging shifter forks. Lift out the cluster gears

and thrust washers with arbor in place. Thrust washers should be assembled in the same position as they were originally. Drive the idler gear shaft out through the rear of the case and lift out the gear. Remove the outer control shift levers and place a punch on the underside of the shifting lever bosses and drive out the tapered pins which hold the shifting lever shafts in the case. Fig. 4. Slide the shift lever shafts inside the case letting the poppet balls and spring drop in case. Remove the shift ball spacer and interlock sleeve. Fig. 5. Disassembly of the sub-assemblies should be done only when parts are worn and need replacing. To remove the mainshaft rear bearing, take a screwdriver and pry out the lock ring and lift out the bearing. Fig. 6.

To disassemble the main shaft assembly first remove the snap ring holding the synchronizer unit and the synchronizer and all the other parts will be free to slide off.

To reassemble the sub-assemblies reverse the above disassembly procedure remembering that all long or offset parts of gears must be assembled in the forward position facing the front of the transmission. This is true also of the offset part of the shifter shoe.

Insert the roller bearings in the

(Continued on page 80)



Dependable Quality
AUTO PARTS



*The Most Complete
Coverage in the
Automotive Field*

- Quality Products
- Uniformly Boxed
- Unconditionally Guaranteed

LION AUTO PARTS AND MFG. CO.
1920 SOUTH MICHIGAN AVENUE • CHICAGO 16, ILLINOIS



"I used to look forward to running out of gas before we were married. Now I dread it!"

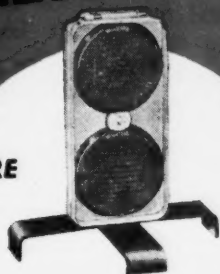
FOR LEADERSHIP IN SAFETY

Grote

Sets the Pace!

**WITH SUPERIOR
LAMPS • FLARES • REFLECTORS**

**GROTE
FLAMELESS FLARE**



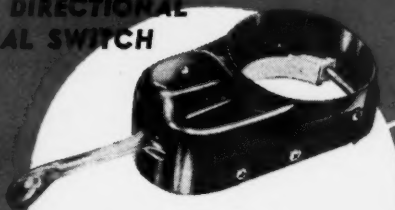
Sturdy, compact and safe without wicks, batteries or dangerous fuses. Brilliant, shatterproof Plexiglas reflectors, visible half a mile.

GROTE MIRROR



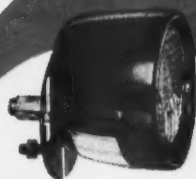
Non-glare mirror in one-piece head — micro-adjustable, preset stop — rigid telescope arm withstands vibration and road shock.

**GROTE DIRECTIONAL
SIGNAL SWITCH**



Automatic self-cancelling — trouble-free operation — universal mounting, easily installed to any steering column without removing wheel.

GROTE STOP AND TAIL LAMPS



Stands the most rugged use. More brilliance with this GROTELITE reflex-type, shatter-resisting Plexiglas lens.



the Brightest Spot on the Road

Every GROTE item meets the highest standards for rugged service — for practical usefulness — for dependability and safety.

Here is design based on today's needs of the modern automotive vehicle — durably constructed of selected materials to give long and safe service in the hardest use.

GROTE lamps and reflectors give **more light** because they are equipped with shatterproof Plexiglas — the preferred plastic for its brilliance and clarity — its high photo-metric, non-fading qualities. You'll go farther — **safer** — with GROTE.

the GROTE
MANUFACTURING CO., INC.
GROTE SQUARE
BELLEVUE, KY.

**GROTE CLEARANCE
AND MARKER LAMPS**



New design, streamlined for flat or curved mounting, with vibrationless, weatherproof base gasket. Red, amber, green or clear Plexiglas lenses.

Pioneers in **PLASTIC LENSES and REFLECTORS**

cluster gears and use cup grease to held them in place. Install spacer, thrust washers and bearing retainer washers. Install the arbor in cluster to keep the rollers and spacers in place while installing.

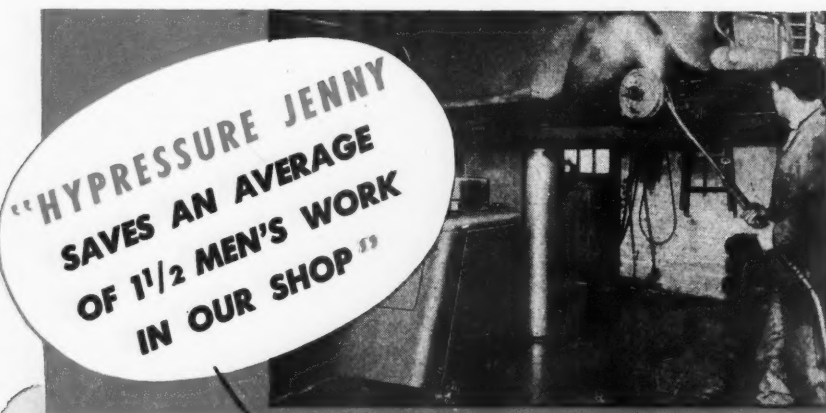
Installing the Sub-Assemblies

Install the interlock sleeve, pin

and poppet spring. Insert the shift levers into the case and fit the shifting poppet balls in the sleeve at each end of the spring. Slide the tapered pins in the lever bosses just enough to hold the levers as they may have to be removed to install the properly fitting sleeve.

A good fit of the interlock sleeve

is very important since the correct sleeve clearance determines the proper shifting action. Sleeves are furnished in various sizes. To check sleeve clearance put one shift lever in neutral and the other in gear position, a clearance of .001 to .005 in. should exist between the end of the interlock sleeve and the shift lever fans. Try various sleeves until the proper clearance is obtained, see Fig. 7, then finish driving the tapered pins in place. Also install the oil seals and outer control levers. Install the reverse idler gear and the countershaft assembly. The countershaft end play should be from .004 to .008 in. Fit the shifting forks and shifting shoes into the shaft levers. Lower the mainshaft assembly into the case and engage the shift fork and the shift shoe. Install the main drive gear and bearing, and the mainshaft rear bearing retainer. Install the companion flange being careful not to damage the rear grease seal.

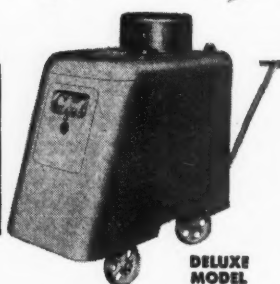


Hypressure Jenny cleans instantly... thoroughly... economically. It flushes oil, dirt and grease from motors and chassis in 10 to 15 minutes... removes dust, bugs and leaves from grill work... flushes radiators... cleans wheels and springs... prepares cars for undercoating. And Hypressure Jenny does it 10 times faster than you can do it by hand. That means time saved, more business, more profits.

Hypressure Jenny steam cleaning before repairs cuts repair time almost in half by saving the time your mechanics usually lose wiping dirt and grease from tools and equipment. Hypressure Jenny further reduces shop labor and expense by cleaning grease racks, pits, equipment, floors, walls, windows, skylights, etc. Truly, Hypressure Jenny will save the time of 1 1/2 to 2 men in any busy shop.



A Full-Powered
All-Purpose
Heavy-Duty
UTILITY
MODEL
for as little as
\$445.00



DELUXE
MODEL

HYPRESSURE JENNY, the original and leading steam cleaner, is sturdy... compact... portable... easily moved from job to job. It is economical... simple to use... ordinary labor can operate it.



MAIL TODAY

Fill out this coupon for FREE SURVEY of your cleaning requirements and estimated savings per year from Hypressure Jenny Steam Cleaning.

HYPRESSURE
JENNY DIVISION
HOMESTEAD VALVE
MANUFACTURING CO.
"Serving Since 1892"
Coraopolis, Penna.

REQUEST FOR SURVEY

Hypressure Jenny Division
Homestead Valve Manufacturing Co., P.O. Box 95-K, Coraopolis, Pa.

We employ mechanics on repair work.
We overhaul or recondition . . . ☐ cars, ☐ trucks, ☐ buses each month.
We paint . . . ☐ cars, ☐ trucks, ☐ buses each month.
We're interested in cleaning ☐ floors, ☐ walls, ☐ windows,
We wash approximately . . . ☐ cars, ☐ trucks, ☐ buses each month.

Based on above facts, please show us the savings or extra profit HYPRESSURE JENNY can produce.

Company.....
By.....Title.....
Address.....
City.....State.....

Illinois Mechanic Wins McQuay-Norris Contest

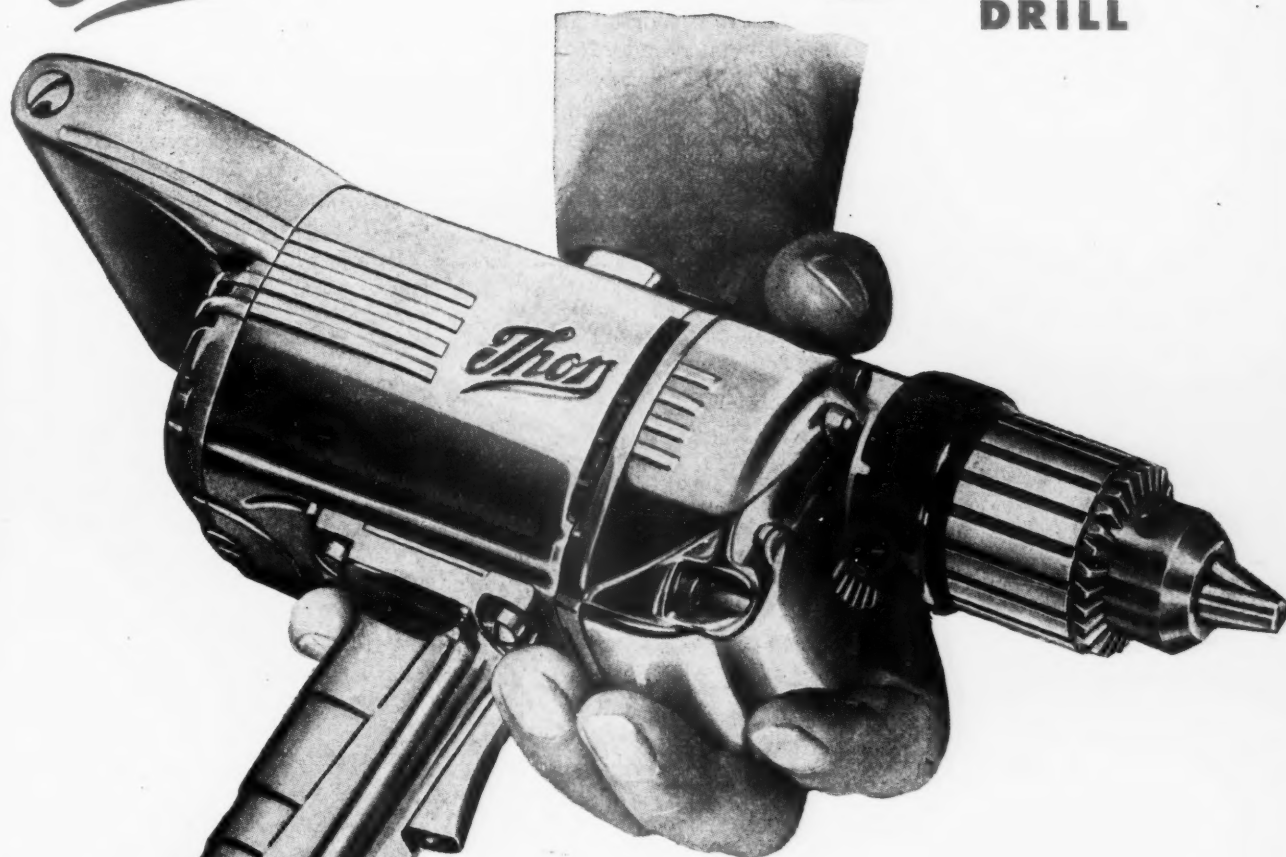
William W. Koons, automobile mechanic of Champaign, Ill., won the \$1,500 first prize in the McQuay-Norris "Leak-Proof" Piston Ring jingle contest.

Floyd A. Megee, Ocean View, Del., won the \$250 second prize. C. H. Candler, Norris, Tenn., won the \$100 third prize. Winners of the 133 \$25 prizes were from practically every state in the Union.

Thor

ANNOUNCES THE 1/2"

Silver Line
DRILL



Much Smaller

Much Lighter

Far More POWERFUL!

**The World's Most Advanced
1/2" ELECTRIC DRILL**

INDEPENDENT PNEUMATIC TOOL COMPANY

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Export Division: 330 West 42nd St., New York 18, N. Y.

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PORTABLE POWER

TOOLS

JOBBER! SEE THOR'S A. S. I. SILVER LINE SURPRISES—BOOTHS A285—A303

MOTOR AGE, November, 1948

In Anti-Trust Case B.L.M.A.

Pleads Nolo Contendere

On Aug. 21, 1947, a Federal grand jury in the United States Court for the Southern District of New York, handed up three indictments against 21 corporations and 53 individuals, members of the Brake Lining Manufacturers' Association, Inc., charging them with alleged conspiracies to violate Section 2 of Sherman Antitrust Law.

On Sept. 22, 1948, before United States Judge Edward A. Conger, in New York City, 17 corporate defendants and 9 individual defendants pleaded nolo contendere to the said charges and the indictments were dismissed as to all of the other defendants.

The 17 corporate defendants were fined \$121,000 and the 9 individual defendants were fined \$31,000.

Lester D. Stickles, 36 West 44th

Street, New York City, counsel to the Brake Lining Manufacturers' Association, Inc., and for a number of the defendants, in pleading nolo contendere stated:

"While the Association pleads nolo contendere to the indictments charging violations of the anti-trust laws, it desires also to point out certain facts.

"The violations charged are based directly upon practices and procedures established under the guidance and at the insistence of the National Recovery Administration. This was at a time when the United States Government was actively engaged in promotion of uniformity in industry and of fair practices among competitors.

"These procedures as proposed by NRA and accepted by the industry resulted in standardization of sizes and in other uniformities which materially benefited the industry as a whole and resulted in substantial savings to the public. Accordingly, such practices were openly adopted and followed as accepted customs of trade, with no effort whatsoever on the part of the members of the Association to conceal them.

"As a matter of fact, the same standards were required in connection with all bids submitted on Government purchases of brake linings and clutch facings. When the computation of list price factors was discontinued by the Association because of these indictments, a representative of the Department of the Navy protested vigorously, pointing to the confusion which

(Continued on page 84)

**you'll go far
WITH THESE BEST SELLERS**

Directional Signal No. 701. Single-faced for installation on fender, body or frame. Baked black enamel finish. Amber plastic lens.

Directional Signal No. 801. Double-faced for front mounting; visible from front and rear. Baked black enamel finish. Amber plastic lens.

Mirror Head No. 861C. Ball-stud type, rimless chrome head 2" in diameter, with 360° adjustment.

Reflector No. 217. Baked gray enamel finish. Shatterproof plastic lens. Rim extends beyond lens for extra protection.

Stop and Tail Light No. N-432. With universal mounting bracket. Clear lower lens illuminates license plate. Available with or without chromium rim.

Armored Clearance Light No. 47. Housing around lens gives maximum protection. Red, green or amber lens. Baked gray enamel finish.

Triple Marker Light No. 33. Glass beehive lens in red, amber or green. Black enamel finish.

Streamlined Marker Light No. 39. May be used on corners in place of two lights. Red, amber, green, moonstone or clear lens; chrome, satin aluminum or black enamel finish.

SAFETY AFTER DARK

ARROW

ARROW SAFETY DEVICE COMPANY

MOUNT HOLLY, NEW JERSEY



"Sure the show's clean—see—it's about birds."

LOOK FOR THE MARKS OF THE PISTON LEADERS!



LO-EX
IN THE PISTON



ON THE BOX



Every piston job you install that performs well is a boost to your business. Your customer stays loyal—tells his friends what good service you give him.

So it pays to buy pistons with care. Standardize on a make that's known for quality and performance. And then be sure they're LO-EX—the name that identifies piston castings by Alcoa.

T-slot design and cam grinding give Lo-Ex Pistons a closer fit, improve compression. And the lightweight, low-expansion alloy makes engines run cooler and quieter, reduces wear.

Why gamble on "just any aluminum piston"? Insist on LO-EX!

ALUMINUM COMPANY OF AMERICA

Makers of Lo-Ex Piston Castings of Alcoa Aluminum

2133 Gulf Building, Pittsburgh 19, Penna.

Sales Offices in Principal Cities

LO-EX *Pistons* of Alcoa Aluminum

Registered Trade Mark



Turn Your Back on . . . Seat Cover Competition

America's Finest Seat Covers

Here's the biggest money-making deal in seat cover history! You can run circles around your competitors with this amazing Rankin profit plan, because it gives you: finest custom-fitted covers that you can sell at the price of ordinary covers. Smart, new patterns and shades in exclusive, costly woven plastics, richly tailored, yet at popular prices. No chain stores or mail order houses can cut in on you, because this is exclusive to independent dealers. Get the facts. Get these bigger profits. Tear out and mail coupon below—TOAY!



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Please send full details on how I can make more on
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Rankin Manufacturing Company
Dept. R, Cedar Falls, Iowa or
Wichita Falls, Texas

In Anti-Trust Case B.L.M.A Pleads Nolo Contendere

Continued from page 82

would result from dropping standards in use since the NRA.

"It must appear odd, then, even wholly incongruous, that while various agencies of the Government urge upon the industry the use of such standards as an accurate measure for purposes of quotations, another arm of the Government questions these standards as susceptible to suspicion of a conspiracy to fix prices.

"Despite all this, despite the progress and the economies effected through such standardization, they have been voluntarily abandoned.

"There are 21 companies and 53 individuals named in the indictments. The total number of witnesses called would run into the hundreds while the evidence to be presented would be by the truck-load.

"The trial of the issues raised would necessarily cover a long period of time, calling for the appearances of executives from the four corners of the nation. At a time when the industry is endeavoring to the utmost to catch up with production needs of the country and to complete the shift from war-time exigencies to peacetime operations, the industry obviously could ill afford to spare top management for a long period."

J. Francis Hayden, chief of the local Antitrust Division of the Department of Justice, represented the Government.



"Martha! Imagine bumping into you here!"



Auto-Lite has a Stake in Your Continued Success

The growth of Auto-Lite has been closely associated with the growth of thousands of leaders of the industry . . . manufacturers, distributors, dealers. Only their continued success can provide the future for which we are building today. In their success Auto-Lite has a stake. The fact is, Auto-Lite advancements in new products, new methods and new production facilities are fully effective only when they contribute to the sound progress of those Auto-Lite serves.

Royce J. Martin
President, The Electric Auto-Lite Company.

Leadership demands a



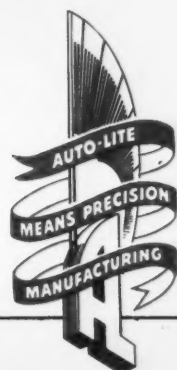
Essential to such leadership as that represented by the sensational new Auto-Lite Resistor Spark Plug is the engineering knowledge resulting from the research, development and manufacture of complete ignition systems for 37 years.

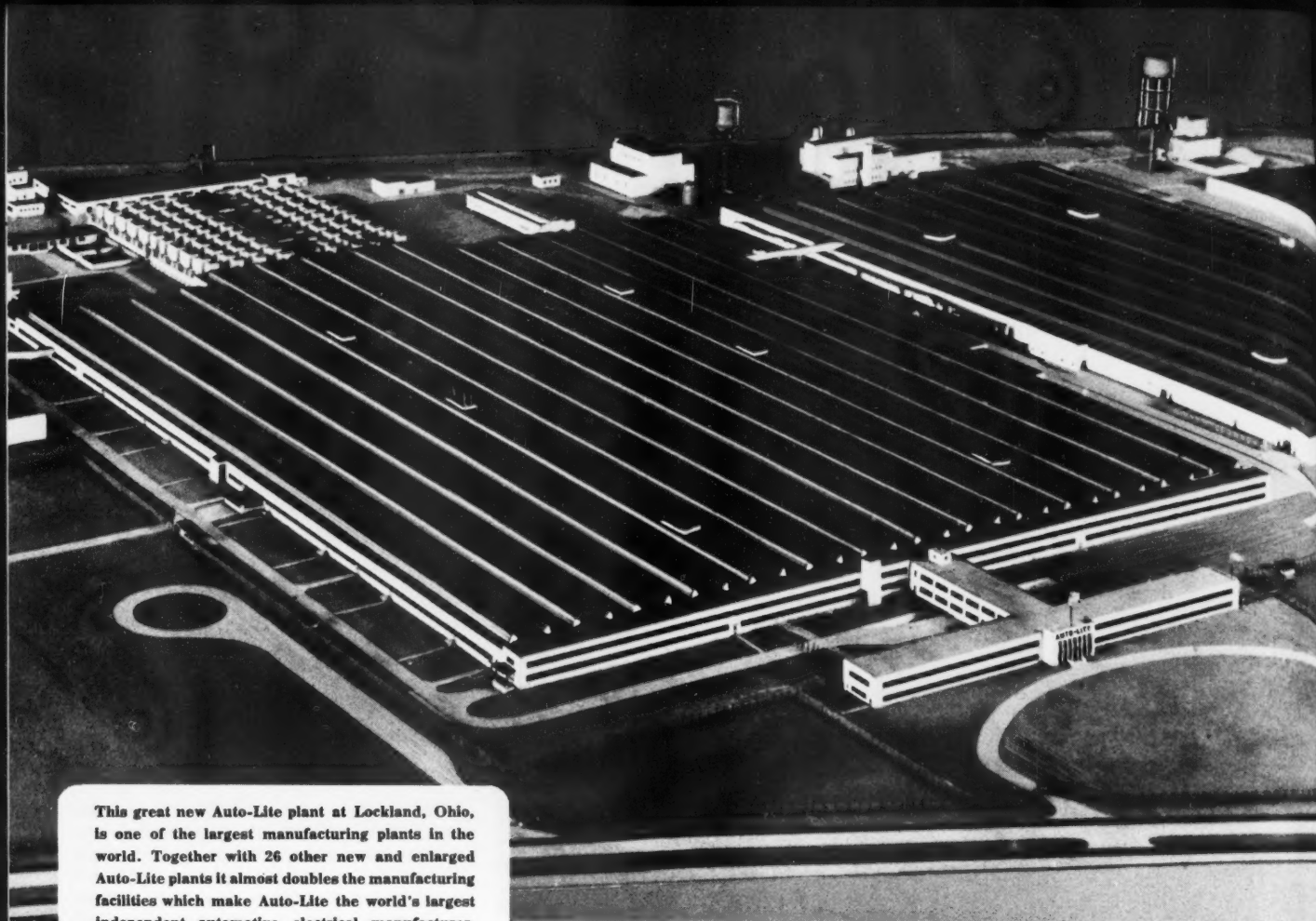
Auto-Lite Spark Plugs Patented U.S.A.

action!



The new Auto-Lite "Sta-Ful" Battery that needs water only 3 times a year in normal car use shows how forward thinking revolutionizes both the standards of making and marketing a product.





This great new Auto-Lite plant at Lockland, Ohio, is one of the largest manufacturing plants in the world. Together with 26 other new and enlarged Auto-Lite plants it almost doubles the manufacturing facilities which make Auto-Lite the world's largest independent automotive electrical manufacturer.

Here's What We've Added to Keep Pace with the Future

The addition of the great Lockland, Ohio, plant to Auto-Lite production facilities is a practical indication of Auto-Lite forward thinking. This commitment indicates the pace Auto-Lite

has set in products, promotion and field support. You are invited to investigate this advanced Auto-Lite program to determine how you can share its benefits, now and in the days ahead.

THE ELECTRIC AUTO-LITE COMPANY • AUTO-LITE BATTERY CORPORATION
TOLEDO 1, OHIO

Pontiac Fenders Are Made of Aluminum

Because of the continuing steel shortage Pontiac is making available a limited number of aluminum rear fenders for service replacement on 1942-46-47 and 48 models.

Since these fenders require special treatment when painting to body color in the field, Pontiac has issued the following instructions:

1—Remove all dirt, grease, finger marks, etc., and apply either duPont 65-1051 gray or 65-1052 red oxide primer surfacer or their equivalent, to the surfaces.

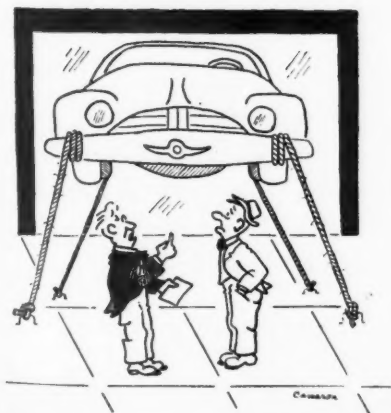
2—Apply color coats in accordance with standard practice.

3—Apply a coat of asphalt-base sheet metal deadener approximately 1/32 to 1/16 in. thick to the underside of the fender.

When installing these aluminum fenders special fastenings must be used. Pontiac recommends the exclusive use of cadmium plated or zinc plated bolts, nuts, and washers that have been painted with primer. This procedure is necessary in order to prevent corrosion wherever steel parts contact aluminum.

When making paint repairs on aluminum fenders where the finish has been removed to the bare metal the following procedure is recommended.

1—Metal should first be thoroughly cleaned of all corrosion products, grease, finger marks, etc. This can best be done by sanding and use of a solvent wash. **DO NOT USE ALKALINE PAINT REMOVER ON ALUMINUM.**



"This model has such floating power we had to moor it down."

MOTOR AGE, November, 1948

2—Apply warm 5 per cent sodium dichromate or potassium dichromate solution (two ounces dichromate in one quart of water) or Alumiprep No. 44 to cleaned surface. Apply with spray or swab and allow to dry.

3—Apply a zinc chromate primer such as Dupont 63-111 or any equivalent material made by a reputable manufacturer. Apply by spraying in a very thin coat. Properly applied zinc chromate primer

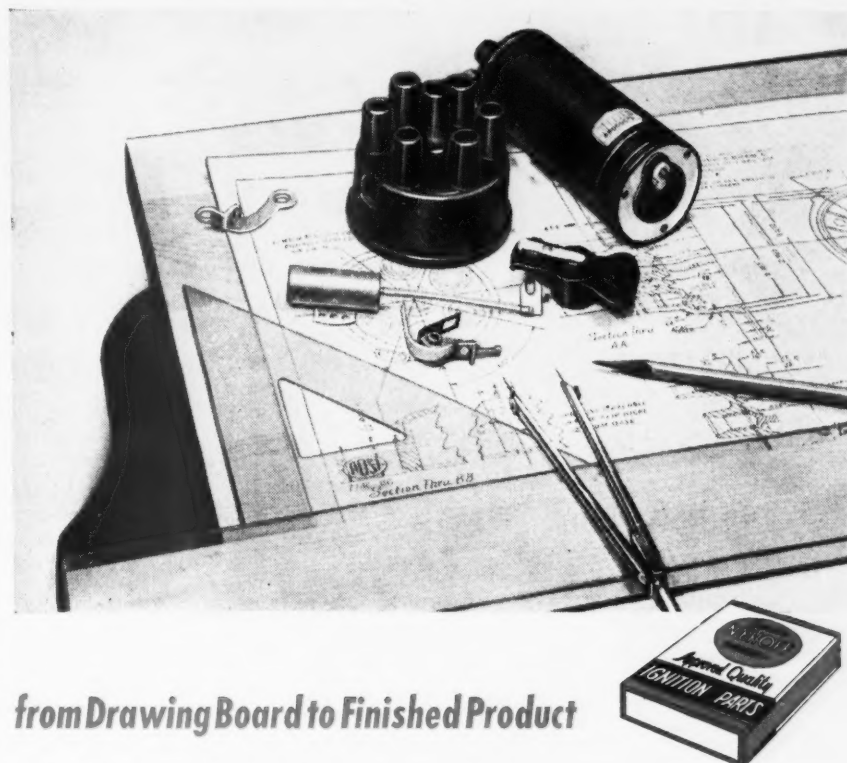
will be light green in color, yellow color indicates too heavy a coating.

4—Apply Dupont 65-1051 gray primer surfacer or 65-1052 red oxide primer surfacer, or their equivalent, to top and underside of fender.

5—Apply finish coats in accordance with standard practice.

6—Apply a coat of asphalt-base sheet metal deadener approximately 1/32 in. to 1/16 in. thick to underside of fender.

Doin' What Comes Naturally..



from Drawing Board to Finished Product

In every phase of manufacture, quality comes naturally at Niehoff. Because of this careful attention to every detail, from designing to packaging, Niehoff Products give top-quality performance. In engineering, stamina and service they match the finest companion parts in the nation's finest motor cars, taxicabs, trucks and buses.

With the demand for Niehoff Approved Quality Products constantly increasing, we suggest that you plan ahead by placing orders well in advance to keep your stock in balance with service needs.



C. E. NIEHOFF & CO.

4920 Lawrence Ave., Chicago 30, Ill.

Branches: BOSTON 34, MASS., 254 BRIGHTON AVE.; LOS ANGELES 15, CALIF., 1330 W. OLYMPIC BLVD.; NEW YORK 9, N. Y., 250 W. 54th ST.



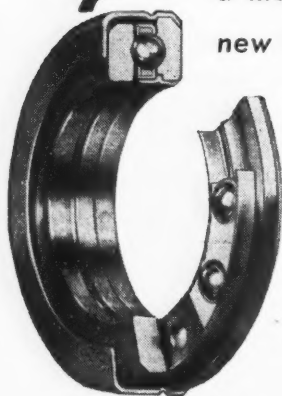
WHEN customers complain about noisy or erratic shifting, page Swishy—he's the greased lightning of slick shifts.

He's the smoothie who shoos away friction.

He's the swift, sure, smooth, silent performance you'll find in the many new cars and trucks that use BCA Ball Bearings as standard equipment.

AND HE'LL KEEP TELLING YOU:

When you rebuild a clutch or do a major overhaul, always include new BCA Bearings as protection against comebacks.



When you buy bearings, look for the Jobber displaying Swishy and always ask for BCA Ball Bearings.

LOOK FOR *Swishy* ON DISPLAY
ALWAYS ASK FOR **BCA**

BCA

Bearings Company of America, Lancaster, Pa.

Standardization Necessary For Transmission Fluids

With the number of automatic transmissions, fluid couplings, and torque converters increasing each year, the automobile and petroleum industries may face a standardization program to supply automobile owners with proper fluids, according to H. R. Wolf, assistant to the technical director of GM Research. He pointed out that transmission fluids are designed specifically for each particular type of unit and that manufacturers either recommend the use of approved fluids or supply the correct one as a service replacement part. Inferior fluids, he added, cause oxidation and varnish at relatively low mileage and prevent proper functioning of control mechanisms. He said that standardization will be necessary because the petroleum industry cannot be expected to supply a large number of different types and viscosity grades of fluid for all of the different models and types of automatic transmissions.

General Motors Production Well Ahead of Last Year

Total production of automobiles and trucks by General Motors for the first nine months of this year was well ahead of the same period for 1947. The corporation built 1,621,043 units up to Oct. 1, compared with 1,372,650 for the same period last year. Production, however, was still behind the 1,865,410 vehicles built during the first nine months of 1941. Truck production is slightly ahead of 1941 with more than 381,000 units the first nine months of this year, about 10,000 more than for the same period of 1941.

A creeper which can be used is worth a dozen laid up for repairs, always insist on

Smash-Proof

See our Ad on page 161
HULBERT MFG. CO.

Lower Investment and Faster Turnover PAY TOP PROFITS!

You have a lower investment in Inlite Brake Lining because this assortment of *only 30 Matched Sets* fits *448 models* of cars—almost everything on wheels! You handle more customers, make more sales, get a faster turnover—and so make bigger, quicker profits! And they're *continuing* profits, because Inlite's original equipment quality—giving *extra* mileage of safe, smooth, straight-line braking—brings satisfied customers back time and again for every kind of service!

COMPLETE LINE FOR ALL APPLICATIONS

Inlite Matched Sets come to you drilled and cut to exact length, a quick fit on nearly all cars and light trucks • undrilled and ample length, for any application • drilled, counter-bored and packed in bulk, for brake exchange shops ready for bonding • in heavy-duty blocks for buses and trucks.

ORIGINAL EQUIPMENT QUALITY!
PRE-SOLD MARKET! • SATISFIED CUSTOMERS!
ONE TOP-GRADE LINE, NO SECONDS!



30 Matched Sets fit 448 models of cars



INLITE

Brake Linings

INLAND MANUFACTURING DIVISION, General Motors Corporation, Dayton, Ohio

MOTOR AGE, November, 1948

promptly on the books. At the end of the year, take an accurate count of inventory in dollars and cents. Do not estimate it, otherwise, the net profit shown on your books will be too high or too low. Your tax return will be incorrect also. Just a few days before filing time, many maintenance men aggravate their stomach ulcers trying to figure out

how much they owe Uncle Sam. When they arrive at taxable income the first time they check back to try to effect economies. Unless they have made errors in plain arithmetic right on the return, they are usually disappointed. This is because they look in the wrong place to save tax dollars.

The actual preparation of the re-

turn is just a mechanical routine. The average garage owner can have this work done for a comparatively small fee by an accountant or go direct to the revenue office in his district and get free assistance from the tax men there. The way to save money on tax is to watch it throughout the year and make your transactions conform to the tax regulations, to make sure that every expense is entered, to write off sufficient depreciation, to see that inventory is figured accurately and not estimated, and so forth. Many automotive maintenance men pay too high a tax because they do not watch tax expense. They keep a closer check on the light bills. Automotive maintenance men frequently overpay on tax because they wait until the last minute to file their returns. This hazard can be minimized by reviewing the recordings during the last week or two of the taxable year and setting up a preliminary tax return then, going over the figures carefully to see where savings can be effected. If adjustments should be made in the book accounts to cut tax expense or if additional recordings for write-offs are needed, then is the time to do it, not after the year has passed into history. Of course, it is understood that all such economies must have legal sanction. However, we want to point out that there are numerous legitimate

(Continued on page 94)

MORE POWER

with
this
NEW



"contact"

BATTERY CABLE

This remarkable new engineering development by Walker reduces resistance in Battery Cables. Direct contact of copper conductor to battery post delivers maximum current.

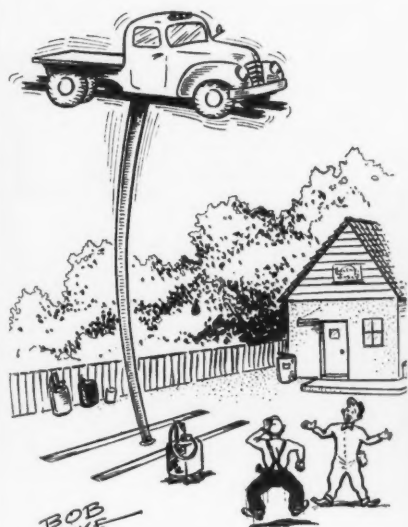
WALKER BROTHERS
Conshohocken, Pa.

- **FULL POWER:** Copper conductors of full gauge do the entire job of carrying the current, thus eliminating ordinary terminal resistance.
- **GREATER STRENGTH:** High-pressure soldering forms cable and terminal into a strong, solid unit.
- **LONGER LIFE:** Extra-heavy, red brass terminal, protected to resist corrosion, assures longer life.

Starter Cables finished in striking metallic blue . . . attractively packaged for modern sales displays.

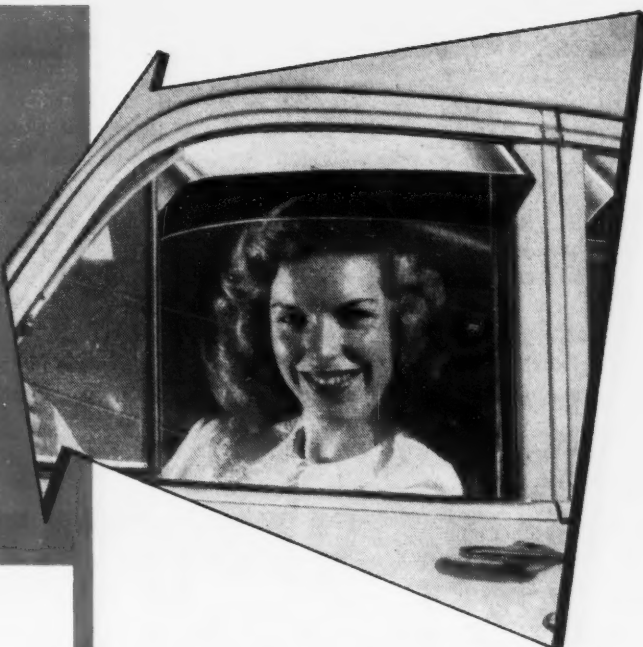
walker
of Conshohocken

BATTERY CABLES
AUTOMOTIVE CABLE ON SPOOLS
SPARK PLUG CABLE SETS
TERMINAL AND CABLE PARTS



"I did try to turn it off, Boss, but it wouldn't stop."

Beautiful Ventshades Bring You Handsome Profits!



Gleaming, streamlined Ventshades add a look of luxury to any automobile. But more than that, they give a lot of extra driving comfort too — providing open-window ventilation when it rains and reducing sun-glare inside the car. The customer appeal of Ventshades means handsome profits to you!

Sold Through New-Car Dealers Only

Manufactured under Pritchard Patent by

AUTO VENTSHADE COMPANY

Atlanta, Georgia

Ventshades are tailored to fit perfectly into the windows. They blend with the car's lines and trim, adding richness without being conspicuous—look like a built-in feature.

Ventilation when it Rains— Shade when it Shines

- Made of Heavy Chrome-Plated Brass
- Rattle-Proof—Rust-Proof
- Quickly and Easily Installed
- Approved by Leading Car Manufacturers
- Now Available for Latest Models



MAIL FOR FULL INFORMATION TODAY

AUTO VENTSHADE COMPANY
P. O. Box 1402, Atlanta 1, Ga.

I am a _____ dealer. Please
Make of car _____
send me complete information about Ventshades.

Name _____

Address _____

City _____ State _____

Where, oh Where?

Continued from page 92

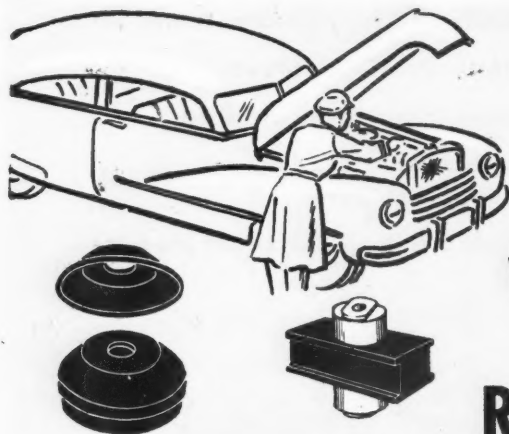
tax savings available to taxpayers if they follow procedures that conform to the code.

Third. How does your financial statement look when compared with the prior year's? Considering the profit earned this year, has your net worth increased to your satisfaction? What did you do with the profits earned? Has the

net increased your bank account, inventory, fixed assets, accounts receivable? Have you invested too much in fixed assets? If the ratio of business property, working equipment, fixtures, etc., to net worth is 1 to 1, you have too much invested in fixed assets and if business in general tapers downward you may have trouble maintaining

YOUR REPUTATION IS PRICELESS!

It takes but a few minutes to protect it...



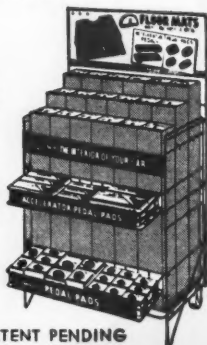
Check Motor Mounts with every Clutch Replacement

THE DOAN DISPLAY MERCHANDISER

PEDAL PADS FLOOR MATS

Doubles your sales, doubles profits. Holds 10 floor mats, 36 pairs pedal pads, 10 accelerator pads. Compact, portable, rolls on wheels at rear. Ideal for salesrooms, service stations, garages, etc. It's easy to double your business with the new Doan Display Merchandiser. Overall size: 32" x 25" x 58".

Write for descriptive folder TODAY!



PATENT PENDING

Doan MANUFACTURING CORP. • CLEVELAND 12, OHIO

Your customer will quickly condemn your workmanship if he finds that a new clutch job did not eliminate "clutch chatter". Avoid this predicament and protect your reputation. You know that defective motor mountings frequently cause this trouble. It takes but a few minutes to check them **WITH EVERY CLUTCH REPLACEMENT**. It results in a more satisfied customer and increased profit on the job.

Use Genuine ARMOR-FLEX MOTOR MOUNTS

your assets. How does your working capital compare? Because of higher costs a maintenance man should have more working capital this year than last year. If you are still paying your bills promptly, you are probably all right on working capital because, in the final analysis, this is what working capital is for and the prompt settlement of your obligations is usually considered a good measurement of the adequacy of "seed money." The working capital is the difference between the current assets (cash, receivables and inventory) and the current liabilities (bills due suppliers and short-term loans). When the ratio of current assets to current liabilities is 2 to 1, the working capital is considered satisfactory.

Fourth. If you give credit, how do you rate on collections? Are your accounts receivable higher than they were at the end of the prior year? If so, why? Is the ratio of credit sales to total sales higher? If so, why? Have you checked over your accounts receivable to determine how many bad debts you must write off this year? Have you been giving credit too freely? Do you use an efficient method of follow-up on collections? Do statements go out promptly the first of each month and follow-ups

(Continued on page 96)



"It ain't good manners to talk with your mouth full."

Stock up now and tie in with G.E.'s great new **FALL AUTO LAMP CAMPAIGN!**

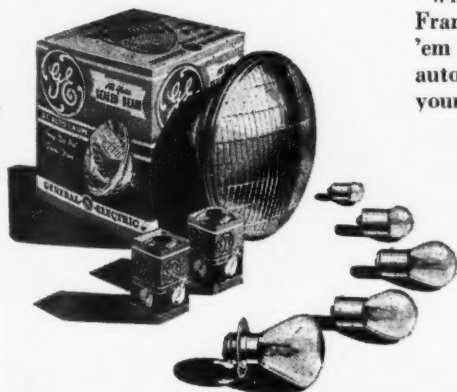


HAVE YOUR LIGHTS CHECKED
next time you leave
your car for service



We're telling your customers all about it!

G.E.'s big Fall auto lamp campaign, based on the same tested and proved



methods that brought dealers such sensational profits last Spring is now in full swing! Right now, advertising in the Post and Collier's tells your customers over and over to have their car lights checked. G.E.'s popular radio show "What's My Name?" starring Arlene Francis, tells 'em again! When you tell 'em too, and tie in with the sellings auto lamp campaign ever, you'll hike your lamp profits to a new high!

Just two things to do

1) Stock up now on the full line of G-E auto lamps. 2) Check the lights of every car left for Winter change-over service. And be sure to ask your G-E distributor for the action-getting display package that will help you clinch sales on the spot. You'll find it pays to promote lamps bearing this mark of quality . . .



FOR EVERY SOCKET . . . FOR EVERY CAR

G-E LAMPS
GENERAL  ELECTRIC

DIRT AND MOISTURE CAN'T GET IN!
that's why G-E ALL GLASS sealed beam Headlamps
DO NOT GROW DIM!

HAVE YOUR LIGHTS CHECKED
next time you leave your car for service

G-E LAMPS
GENERAL ELECTRIC

DIRT AND MOISTURE CAN'T GET IN!
that's why G-E ALL GLASS sealed beam Headlamps
DO NOT GROW DIM!

HAVE YOUR LIGHTS CHECKED
next time you leave your car for service

G-E LAMPS
GENERAL ELECTRIC

HAVE YOUR LIGHTS CHECKED
next time you leave your car for service

G-E LAMPS
GENERAL ELECTRIC

Where, oh Where? Continued from page 94

sent out within 10 days after each mailing? Do you make up a list of delinquent accounts every quarter and check them up to determine what can be done to make them settle up? Such lists keep down collection losses. Too many automotive repairmen go gunning for money from delinquents only when they need it to pay their own bills.

Install an effective collection system and use it.

Fifth. Do you know how much profit you make on each job? To price properly, the repairman should use a MOTOR AGE Flat Rate Manual, and to know how much profit he actually earns on each job he should use job costing forms. The standardized double-entry sys-

tem contains only the financial accounts, which are arranged to record income and outgo as they materialize, but the figures cannot provide job costs. This information is procurable only from job costing forms showing the materials used, the hours worked on the job and the overhead expense chargeable to the job. His job costs may be high because his over-all costs are too high or his estimates are figured too low. Often the reason for a variance between estimated and actual cost on a job will be found in the overhead expense. If the repairman uses only financial accounts, he'll never be able to find the reason for a variance. His profit and loss statement won't show the profit he expected to earn but the reason for the deficiency will be kept hidden from him.

Job costing forms should be filed away, the records grouped according to the type jobs handled. These are called experience figures. Every repairman should have a backlog of experience figures covering the jobs handled so that he may refer to them when estimating or analyzing current costs. These figures are a dependable guide to management.

Sixth. Do you prepare a profit and loss statement monthly? Some repairmen prepare operating statements only once yearly and keep no job cost records. So in November they are gauging the profitability

(Continued on page 100)

GO...with SUPERGO

TOPPER NO. 5

SUPERGO Voltage Regulators have super-quality windings and both electrical and mechanical features which critical Tune-Up specialists will recognize upon inspection as outstanding construction.

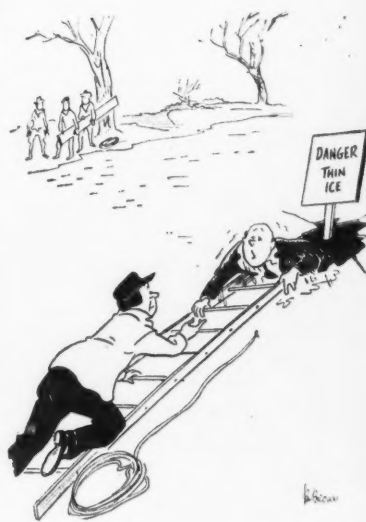
America's OUTSTANDING IGNITION PARTS

There's no reason for you to use anything but the best in ignition replacement parts. SUPERGO super performance parts are precision-built for peak performance — a line developed through 45 years of research by the Wells organization.

It's a heavier duty line that gives guaranteed greater satisfaction on which to build your ignition repair business. Ask your jobber to serve you with SUPERGO, your best buy in Tune-Up parts. Wells Mfg. Corporation, Fond du Lac, Wis.

QUALITY TELLS — DEMAND WELLS

WELLS
Automotive Ignition



"I didn't have my glasses on, so I had to get pretty close to read the sign."

MERCHANDISING THAT HELPS YOU SELL . . .
MAKES DURKEE ATWOOD Automotive PRODUCTS—

*The Profit Line
 for '49!*



*We'll be
 at the show*

**with the fastest-selling, money-
 making merchandisers and
 assortments we've ever offered!**

Aggressive merchandising will be the key to profits in 1949. That's the kind of merchandising we're planning for next year and you'll see what we mean at the show. We're hitting directly at problems of inventory turnover and sales by offering the leaders of the Durkee-Atwood line in attractive merchandisers. Each one is a fast-seller for you. We have several of them ready now and more coming!

The Durkee-Atwood line, including both rubber and chemical products, is uniformly packaged. Dealers can now handle a complete, quality line of 41 items . . . from inner tubes, fan belts and Dor-Tite to glass cleaner, friction tape and Dur-A-Cloth, and the customer will identify each package as a Durkee-Atwood product. Every time the dealer sells one item from the line he builds customer acceptance for the complete Durkee-Atwood line. *Durkee-Atwood Company, Minneapolis 13, Minnesota.*

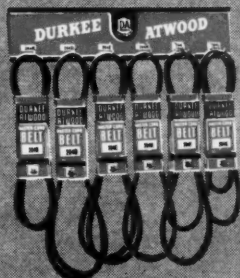
**DURKEE
 ATWOOD**
 Automotive Products

STOP
 IN AT BOOTHS
 D333-335-337-339

New **MERCHANDISERS LEAD THE DURKEE-ATWOOD PROFIT PARADE!**



DOR-TITE



FAN BELTS



RADIATOR HOSE



DUR-A-CLOTH



FRICTION TAPE

No matter what parts
you need—or
when you need them...



NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

N
Am
B
BRAKE L
IAN B
ARIT
ED REA
PUR
BRAKE
SHOCK A
PUSHIN
GLASS

*Your NAPA Jobber
is a Good Man to Know!*

Nowhere is such fast, complete service available on such a broad

range of first-quality parts . . . as from your NAPA Jobber. He can supply

you promptly with parts for all cars and trucks—of all makes and ages.

From his own stocks, he can give you practically any part you normally

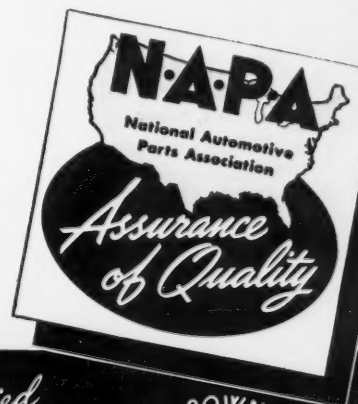
would need—at any time. Rarely needed numbers, which no jobber

can afford to stock, he can get for you—overnight or quicker—from his

nearby NAPA Warehouse. Call your NAPA Jobber.

NAPA

*is the largest Independent Parts
Organization in the Industry!*



American Brakeblok
BRAKE LINING • CLUTCH FACINGS
FAN BELTS • RADIATOR HOSE

Allied WISCONSIN
PISTONS • SLEEVES

UNITED PARTS
FUEL PUMP
HYDRAULIC BRAKE
SPEEDOMETER AND
BRAKE CABLES

Monmouth
ENGINE BEARINGS
CLUTCH PLATES & PARTS
CHASSIS PARTS

TRICO
VACUUM OPERATED
SAFETY PRODUCTS

Allied GRAPHO
WATER PUMPS
PARTS • PACKING

BROWN LIFE
GEAR BOXES
BALKAMP
PARTS FOR FORD
CHEVROLET, PLYMOUTH
AND ALL POPULAR CARS

ARITAN
PISTON EQUIPMENT

Buffalo MicroTest
MUFFLERS
GEARS • AXLE SHAFTS

Allied A.P.C.
VALVES

STANDARD
GREASE RETAINERS

DETROIT
UNIVERSAL JOINTS

CELORON
TIMING GEARS

PURITAN
BRAKE FLUID
SHOCK ABSORBER OIL
FLUSHING FLUID
WASHER SEALS

Allied RAYMOND
VALVE SPRINGS

BRIGGS
SHOCK ABSORBERS

ECHLIN
IGNITION PARTS

BUFFALO
FIRE EXTINGUISHERS

Allied PRECISION
PISTON PINS

DUCKWORTH
TIMING CHAINS

DITTMER
TRANSMISSION GEARS

MARTIN-SENOUR
AUTOMOTIVE FINISHES

Belden
WIRE AND CABLE

New Britain
HAND TOOLS

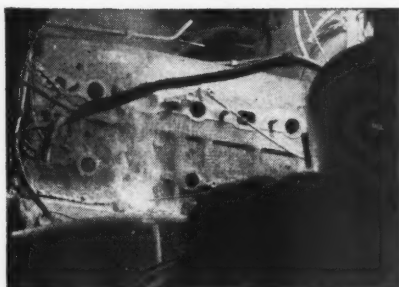
FEDERAL
BALL BEARINGS

Spicer
UNIVERSAL JOINTS

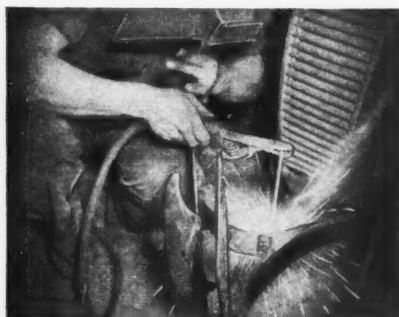
of their wares and services or pricing current sales on the basis of operating ratios experienced a whole year ago. In this day of rising costs, this is obviously dangerous. The repairman should prepare a profit and loss statement monthly so that he has current knowledge of his operating figures for the business as a whole.

The weaknesses that show up when reviewing the year's work will differ with the business. Based upon our accounting contacts, we have mentioned the important factors to review and you can make your analysis along these lines adding whatever seems desirable. The main thing is to check back over the past year's operation with a

Lowest Priced A.C. Welder Simplifies Auto Repairs



REPAIRS ENGINE BLOCK. "Ferroweld" electrode is used to repair a 4" crack using the new "Lincwelder" 180 AC arc welder.

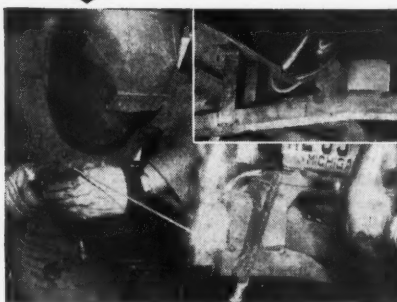


REINFORCES BUMPER SUPPORT. "Shield-Arc LH-70" repairs this broken bumper bracket better and stronger than new.

REBUILDS TRUCK BODY. "Fleetweld 47" is ideal for replacing wooden floor with steel sheet. Sides are reinforced with steel straps.



ADDS TRAILER HITCH. Channels are flame cut, formed and fillet welded to car frame to build this house trailer hitch.



SEE IT! TRY IT!

PRICE
\$150⁰⁰
FREIGHT
PREPAID

**Lowest Priced
Welder**



**"Lincwelder" 180 A.C.
with the amazing
"Arc Booster"**

**World's
Easiest
Welding**

Accessories as shown \$19.00

Write for Bulletin 370. The Lincoln Electric Company, Department 326, Cleveland 1, Ohio.

view to improving managerial practices and not say "Good riddance" and forget it.



"But what happens when you don't run out of gas?"

Disabled Workers Achieve Good Record in Shops

Disabled workers in the automobile and automobile equipment industries, when properly placed, make slightly better employment records than their able bodied fellow workers. This conclusion was revealed in a study prepared by the U. S. Bureau of Labor Statistics for Veterans Administration.

The survey matched the work performances of some 11,000 impaired and 18,000 unimpaired employees in most major industries throughout the country.

Of the disabled workers, 1,656, or 15 per cent, were employed in the automotive field. They held jobs such as assemblers, repairmen, tire makers, welders, laborers and foremen.

The BLS study disclosed the following:

1. Handicapped workers suffered fewer serious disabling accidents than the able bodied.
2. The disabled experienced the same number of minor injuries as their able bodied fellow workers.
3. Production records of the impaired were higher than records of the unimpaired.
4. The disabled were absent from

(Continued on page 102)

ENORMOUS FIELD FOR **ENGINAIR** AMONG AUTO OWNERS FOR THESE REASONS:

**YES! CAR OWNERS GET
AIR SERVICE AT GAS STATIONS... BUT**

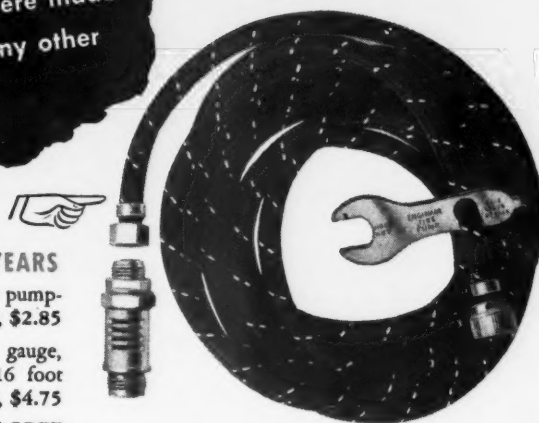
- SPARE IS OFTEN TOO SOFT TO USE WHEN NEEDED
- SLOW LEAKS LET TIRES DOWN OVERNIGHT, OR ON ROAD
- CHILDREN SOMETIMES DEFLATE TIRES
- TIRES ARE SOFT WHEN CAR HAS BEEN IDLE A LONG TIME
- THESE TIRE EMERGENCIES ARE TROUBLESOME AND EXPENSIVE

IN 1947... Over 96 million
emergency tire repairs were made
in U. S. A.—more than any other
class of car service...

NOW... ONLY
\$2.85 retail

**EVERY CAR OWNER
CAN INFLATE HIS OWN TIRES
"ON THE SPOT"
ANYWHERE, ANYTIME...
WITH ENGINAIR**

Those who do much pump-
ing will want ENGINAIR
with built-in air gauge.
Retail, \$4.75.



HERE IT IS! GUARANTEED TWO YEARS
ENGINAIR complete, 12 foot hose, one pump-
ing element, without air gauge. Retail, \$2.85

ENGINAIR complete with built-in air gauge,
shows pressure in tire while pumping, 16 foot
hose, 1 pumping element. Retail, \$4.75

AUTO, TRUCK, TRACTOR OWNERS AGREE
ENGINAIR is finest, most dependable "on the
spot" power air service on the market.
Farmers depend on ENGINAIR.

Now for only \$2.85 every car owner can have this
economical "on the spot" power air service.

GUARANTEED TWO YEARS, ENGINAIR
gives many years fine service. Used by Armies of
6 nations. Over a million in use in U. S. A.

JOBBER!!! DEALERS!!!

No wonder ENGINAIR is recommended by lead-
ing tire and vehicle manufacturers...ENGINAIR
gives 25 to 60 lbs. higher pressure than any other
such pump. We pioneered this type of pump in
1930, spent many months in exhaustive develop-
ment, and received several U. S. and foreign
patents. ENGINAIR is the pump you want to
offer your customers because it's patented and
guaranteed 2 full years.

Let us send you complete details about ENGIN-
AIR together with jobber or dealer prices and
facts about initial "no obligation" test order plan.

FEATURE amazing low cost ENGINAIR... for
only \$2.85—every car owner can now have this
dependable, reliable power air service.

THE MOTOR DOES THE WORK!!!

Here are the facts about patent protected ENGINAIR

- Pumps up to 105 lbs. into tire, 90 lbs. quickly.
- It's guaranteed to pump only cool clean air.
- Small enough to fit all vehicles without interference.
- Install in only 1 minute.
- Needs no service—not even oiling.

ENGINAIR IS MADE AND GUARANTEED BY

G. H. MEISER & CO.

(EST. 1906) NOT INC.

327 EAST MARQUETTE ROAD · CHICAGO 37, ILL.

G. H. MEISER & CO.

327 East Marquette Road, Chicago 37, Illinois

Send complete information about ENGINAIR together with price lists
and "no obligation" test order plan. Dealer, give your jobber name.

NAME

ADDRESS

JOBBER NAME

ADDRESS

CHECK ONE

☐ DEALER

☐ JOBBER



A CLEANING TIP...

**USE
MAGNUS 755
ON ALL MAKES AND YEARS
FROM 1899 TO 1949**

YOU BET IT RUNS!

This 1899 Locomobile Steamer is owned by Mr. Vito Fresalone, proprietor of the Salem Auto Repair, Union, N. J. It is kept in A-1 operating condition, and piles up a respectable mileage every year. It has taken many prizes at antique shows, besides being a top-liner in all kinds of charity drives, community parades, etc. \$755 is regularly used to clean the fuel lines.

PROBABLY you don't get many 1899 Locomobile Steamers for servicing . . . but if you do, watch out for the fuel line. It gives trouble!

The fuel line in this car passes over a preheater which vaporizes the fuel before it reaches the main burner. The metal mesh filter in the fuel line tends to become clogged with carbonized fuel deposits.

You know the answer. Magnus 755 does an extra quick, very thorough job on carburetors and other parts with carbonized oil deposits on today's cars. So it makes quick work of the trouble in the 1899 Locomobile Steamer.

If there's one single cleaning material you need more than any other—it's Magnus 755. It desludges without dismantling. It removes carbonized deposits without hand work. It saves you time and labor and improves the quality of your cleaning.

Ask for **FREE** descriptive bulletin.

MAGNUS CHEMICAL COMPANY, 174 South Ave., Garwood, N. J.

IN CANADA — MAGNUS CHEMICALS, LTD., 4040 Rue Masson, Montreal 36, Que.

Service representatives in principal cities.



**Disabled Workers Achieve
Good Record in Shops**

(Continued from page 100)

work more frequently than the able bodied.

5. The voluntary quit rate of the handicapped was higher than the rate of the able bodied.

According to the study, impaired workers experienced 8.9 serious disabling accidents per 1,000,000 man-hours worked, compared with 9.5 accidents for the able bodied. Of 172 mishaps revealed in work records of the disabled, none was serious enough to cause permanent and total disabilities.

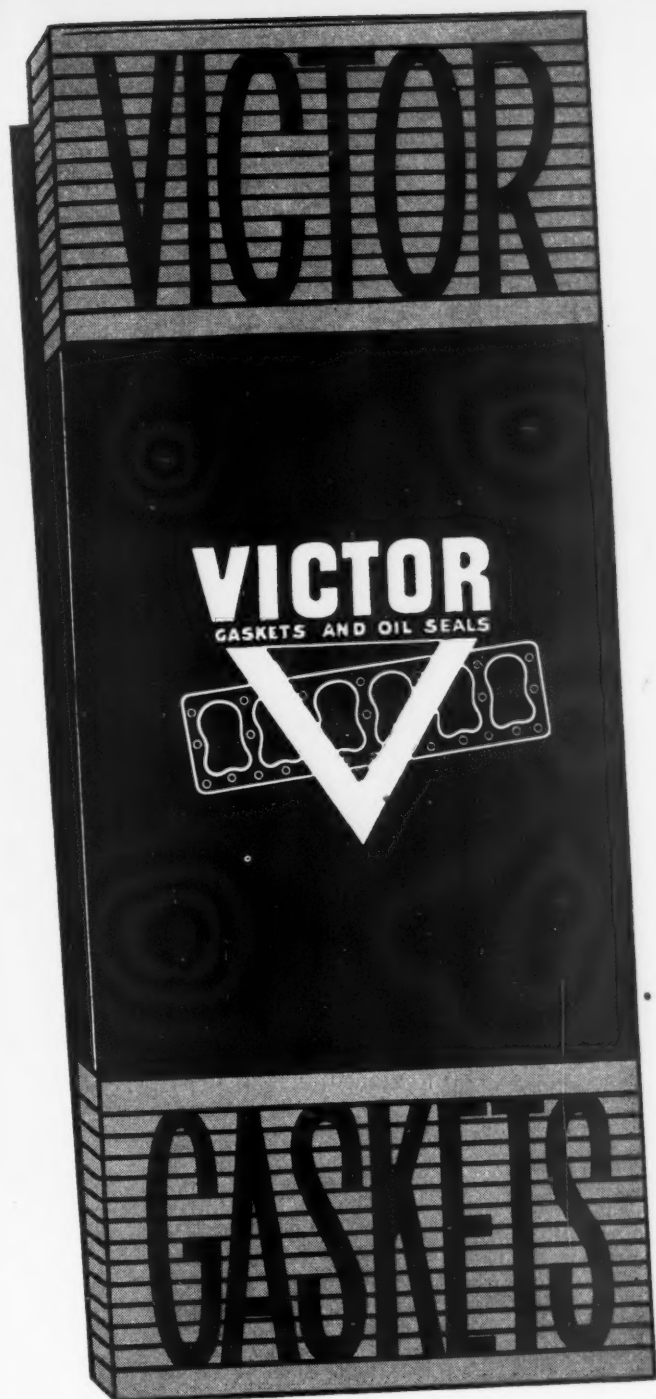
BLS attributed the safety record of disabled workers to the facts that impaired persons generally are more carefully placed and that, having impairments, are more safety-conscious.

Nondisabling injuries—defined in the study as injuries not resulting in permanent impairment or loss of more than one day's work—were experienced at the same rate by the impaired and the unimpaired. The survey revealed that both groups lost 9.9 days per 10,000 man-hours worked.

Impaired workers made better production records than the unimpaired, the study showed. With the output of able bodied workers established at 100, the disabled achieved a production record of 101.



"Pull 'er ahead, slow, Bill, or he'll never get off that spot!"



New Armstrong-Victor "Job Packages" make cork gaskets easier to order, easier to use. Each package contains all the cork gaskets you need for a specific repair job. You don't get held up on the job because a needed cork gasket was overlooked. Armstrong-Victor "Job Packages" are available for all popular cars, buses, trucks, tractors, and stationary engines. Order your basic stock of Armstrong-Victor Cork Gaskets in convenient new "Job Packages" today.



LOOK FOR THE TWO NOTCHES

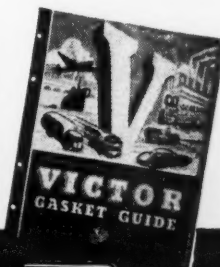


Exclusive Armstrong-Victor Replacement Gasket Trade-Mark

VICTOR GASKET GUIDE

Victor publishes the most comprehensive Gasket Guide compiled—contains:

1. Factory numbers with Victor numbers.
 2. Special indexing where there are numerous motor models.
 3. Markings to show gasket set contents.
 4. Up-to-date gasket popularity ratings.
- Victor Manufacturing and Gasket Company,
5750 Roosevelt Road, Chicago 90, Illinois



Armstrong-Victor



weighted and with seven main bearings. However, counterweighting is better distributed on the 1949 model by the use of eight counterweights instead of the four used previously.

Reduction in the number of camshaft bearings from six to four on the Ambassador is claimed to increase oil pressure at idling speeds.

"600" pistons now are fitted with four rings, as on the Ambassador, instead of the three ring set-up used previously, rods being $\frac{1}{4}$ -in. shorter to provide more space for the ring belt. The piston is made without a vertical split in the skirt. Piston pins on the "600" are clamped in the rods and at the same time the rifle drilling of rods has been elimi-

nated on the "600," although it is continued on the Ambassador.

A newly developed water pump with a cartridge type packless seal is standard on both models. The seal is enclosed in a metal cartridge which is mounted and sealed in the pump body by means of a flexible, doughnut-shaped rubber ring.

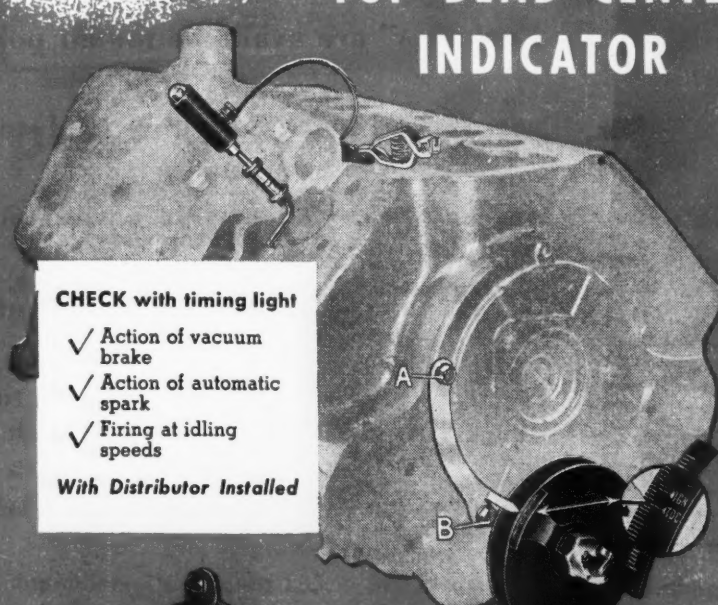
Instead of the conventional type thermostat used heretofore, Nash has adopted a thermostat operated by a temperature-sensitive element consisting of a capsule filled with a special heat sensitive powder which expands on heating. It is unaffected by foreign material in the cooling system and is not subject to injury.

By making some major changes in the carburetor for both engines, it is claimed that fuel economy is improved from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles per gallon up to 50 mph. Developed by Nash engineers, the carburetor is said to be simpler by the elimination of a separate jet, plug, and vent. The accelerating pump is arranged to discharge into passages between the main jet and the high speed nozzle. Since these passages now are combined, several special modifications had to be introduced in the design. For one thing a lightly loaded ball check valve is installed in the discharge passages from the accelerating pump to prevent pullover of fuel during steady speed operation. The additional pressure created by the accelerating

(Continued on page 107)

NOW... FOR CONSTANT FORD ECONOMY—
check Distributor Performance in a few minutes
with

Thexton TIMING PLATES
Permanent Installation in 30 minutes
with
TOP DEAD CENTER INDICATOR



CHECK with timing light

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THEXTON TIMING PLATES ARE PERMANENT

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Products the mechanic knows and trusts



"Nothing, thanks—just window shopping."

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"SAFETY-FILL" BATTERIES

**Sell Quicker, Easier
at
Greater Annual Profit!**



Willard exclusive Safety-Fill construction provides automatic protection against overfilling. It guards the cables and other under-the-hood metal parts against damage and corrosion from acid spray.

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**THERMOSTATICALLY CONTROLLED FAST CHARGER-TESTER
ASSURES**

**FULL CHARGES
FAST CHARGES
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WILLARD QUALITY THROUGHOUT
Every component part of the Willard Fast Charger-Tester has been designed to meet Willard quality standards—every part has been rigidly tested. The Willard Fast Charger-Tester is designed and built to fast-charge safely . . . to test accurately and to last a long time.

pump is sufficient to force the check valve from its seat. At other times the check valve isolates the two fuel passages.

Some important changes have been made in the exhaust piping of the two models. On the Ambassador the pipe is run around the front of the engine to avoid overheating of accessories on the left side of the engine. On the "600" the piping is shortened by eliminating the reverse bend and leading to the muffler directly from the rear end of the section clamped to the block, rather than from the front end. At the same time the fuel line on the "600" has been moved to the left side away from exhaust pipe and muffler to reduce vapor locking tendency. The fuel line in the Ambassador also has been relocated to the side opposite the exhaust system, crossing over to the fuel pump at the front cross member.

The battery, of side-by-side cell type, moves from under the front seat to the engine compartment on the left side near the starting motor.

Following the pattern of engine mount design on the 1948 Ambassador, four mounts are used on each engine with box-type rear mounts fitted on the rear engine mounting cross member. Although this cross

member is interchangeable on both models, the mounts differ in size. The rear mounts aid in absorbing both wheel thrust and vertical loads. Front mounts are located on the front suspension member and are independent of the body structure. It is still possible to drop the oilpan without removing the engine.

Torque tube drive and coil spring suspension at the rear are standard features on both models, taking the Ambassador out of the Hotchkiss drive category. Although the front end construction of the torque tube on the "600" remains the same as before, it was necessary to develop an attachment of greater capacity at this end for the Ambassador. Rubber is used extensively at this point of the Ambassador and the universal joint is fully sealed. Rub-

(Continued on page 108)

STORM'S The Line for '49

NOW Storm-Vulcan No. 15 Crankshaft Grinder

Offers These 4-New Features

1 **PRECISION GROUND JOURNALS ASSURED**
SPRING LOAD CENTER, an exclusive new feature, insures against "out-of-round" grinding! Takes the "whip" out of crankshafts that have become slightly bent or sprung in service.

2 **INCREASED SPEED AND EFFICIENCY**
QUICK RETRACTION LEVER is right in front of operator. It lessens operator fatigue... speeds up work giving greater production volume, with less time for each job.

3 **SIMPLIFIED CONTROL FEED**
EYE-LEVEL FEED DIAL is right in front of operator. It simplifies grinding wheel feed-up... is easier to read and more convenient.

4 **QUICK POSITIVE CENTERING**

NEW ADJUSTABLE THROW HEADS enable operator to center journals quickly and easily without removing throw head or crankshaft. Eliminates extra set-up. Absolutely no "shimming" necessary.



See it
at the
ASI Show

The Storm-Vulcan complete line of motor rebuilding machines offer more plus features than ever before in their history!

Compare them for ACCURACY... PRODUCTION SPEED... LONG SERVICE... And PRICE with any machines on the market... then you'll know why we say, "Storm's the Line of '49."

STORM-VULCAN, INC.

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World's Largest Exclusive Manufacturer of
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Visit our display at the ASI Show in Chicago (Booths A-396 to A-400 and B-395 to B-399) and see firsthand what these four important, new features mean to fast, absolutely true crankshaft grinding!

STORM-VULCAN 3-118
2504 Commerce St., Dallas, Texas.
Please send complete information on the new, No. 15 Crankshaft Grinder.

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City _____ State _____



"Really makes a handy little blind,
doesn't it?"

ber also is used at the junction of the truss rods with the torque tube. Both jobs are fitted with a rubber mounted ball bearing midway of the propeller shaft, replacing the previous plain bearing. It is sealed and lubricated for life and needs no attention.

As mentioned earlier the front suspension is of the same general

type on both models, except for a new front wheel spindle assembly on the Ambassador. This provides a greater span between upper and lower kingpin bearings and saves about 11 pounds of weight in forgings alone.

With the new suspension a track bar is used at the rear on both series to control axle-to-body rela-

tionship. Only the Ambassador mounts a front sway bar. Dust tubes have been removed from shock absorbers on both models, the change having the effect of reducing operating temperatures and the tendency to amplify road noise.

The clutch hook-up on both models is the same as adopted recently on the "600." The transmission and overdrive set-up is continued as before, except for a new Warner Gear transmission on the Ambassador. To maintain the same propeller shaft lengths and to simplify the installation of overdrive, the rear housings of conventional transmissions are made sufficiently longer to compensate for the added length of the overdrive unit.

Some weight saving has been effected by utilizing aluminum in certain instances. For example, aluminum is employed for the die cast inlet manifold cover on the Ambassador. An aluminum clutch housing for the "600" accounts for a saving of 12½ pounds. Water pump housings for both models also are of aluminum.

Returning to body details, the new jobs use a one-piece windshield of unique design, fitted with curved glass so as to move front pillars back for better vision. The windshield is installed from the outside and water tightness is said to be easier to maintain. Wiper blades

(Continued on page 110)

DOLE

DV THERMOSTATS

● Assure improved cooling in modern engines . . . designed to control higher pump pressures and for use with pressure caps. Four types give almost complete coverage of motor needs—a *simplified stock*.

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Make Thermostat Replacement a Part of Every Motor Tune-Up

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Packard Ignition Cable Sets are easy to stock on
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They're easy to sell. Customers like to know that
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their car.

And when you sell a re-wiring job, just reach for
the right set and put it on. There's no hunting,
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It's easy to boost your re-wiring profits. Order
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lacquered cable, from your Packard distributor.



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Four-Forty Cable Lacquered Cable
9 Packard Ignition Cable Sets in each
group give well-balanced assort-
ment for majority of cars on road.

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AUTOMOTIVE AND AVIATION WIRING**

are of a new type with greater flexibility for cleaning curved surfaces. The windshield wiper motor is located inside the Weather-Eye heat distributing cover, uses steel cables running over pulleys to provide power connection to the two wiper heads.

Extensive changes have been made in the design of the Weather-

Eye to improve heating effectiveness at low car speeds; to provide better distribution of warm air in the passenger compartments; and to produce a more effective water shedder. In this arrangement the defroster fan draws all its intake air from below the heater core, thus adding to the total heated air delivered to the passenger compart-

ments and increasing comfort.

Structurally the new bodies are basically the same as the former "600," except for many details and revisions to accommodate the new styling motif. From the standpoint of the body plant the new body is 23 inches shorter than it was for the 1948 "600" and about seven inches shorter than the former Ambassador body. This stemmed from front end redesign to make better connection with the front suspension system. As a result the front end body extensions, formerly located forward of the "A" structure, have been eliminated.

Sleeping arrangements, long an exclusive Nash feature, have been greatly improved with the development of an entirely new bed. On the new models, both the front and rear cushions are used for making the bed, the front seat back cushion being arranged to swing downward for this purpose. It is said that the bed can be made up more easily while the trunk compartment is left undisturbed since the bed is formed entirely within the passenger compartment.

Extra Value plus eye appeal—that's the business-winning combination GATKE Grooved Brake Lining offers.

The exclusive GATKE Grooves eliminate extraneous matter for better contact and uniform brake response with smooth, non-grabbing action.

What is more, the GATKE Grooves are visible evidence of mechanical superiority. They attract attention and excite the interest of car owners—show why your Brake Relines with GATKE Grooved are much better.

Ask your GATKE Jobber or write.

Only GATKE Grooved BRAKE LINING gives you all these FEATURES

Quick elimination of dust, grit and extraneous matter thru sweeping action of the Grooves.

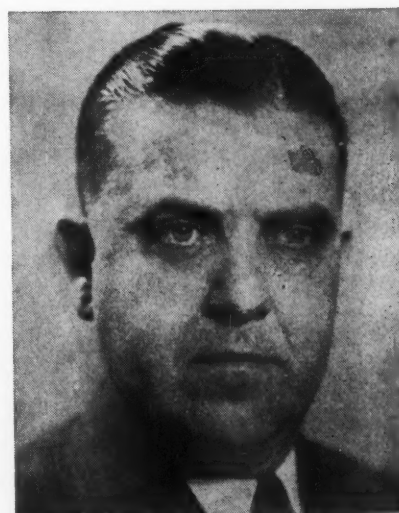
Quick restoration of wet brakes. Elimination of wear to brake lining and drum ordinarily caused by dust and grit.

The uniform brake response obtainable only when contact between lining and drum is unobstructed. Air cooling induced by the Grooves. Eye appeal and positive identification provided by the exclusive GATKE Grooves.

Business-winning extra value that costs you nothing extra.

Al Dye Named V P of Jambor Tool

E. L. "Al" Dye has been named as vice president and general sales manager of the Jambor Tool and Stamping Company, Milwaukee,



Wis. Having been in the automotive replacement parts industry for over twenty years, Mr. Dye is well known by wholesalers over the entire country.

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ARE YOU ON THIS GRAVY TRAIN?

Nearly 4 million Saturday Evening Post subscribers . . . nearly 5 million farmers . . . will read about AC "Five-Star Quality" Oil Filters and Elements in November . . . and see the AC Service Dealer sign featured in every ad.

AC's "Five-Star Quality" Filter is *the most widely advertised oil filter*. Every AC Service Dealer is tied in with the advertising through the Service Sign.

If you want to get in on this powerful business-building campaign, see your AC wholesaler today.

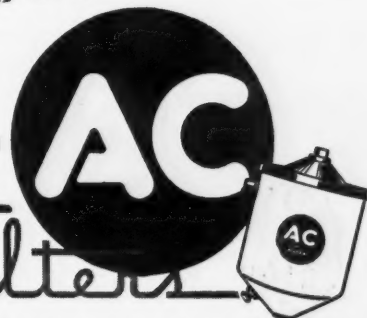
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DAIRYMAN

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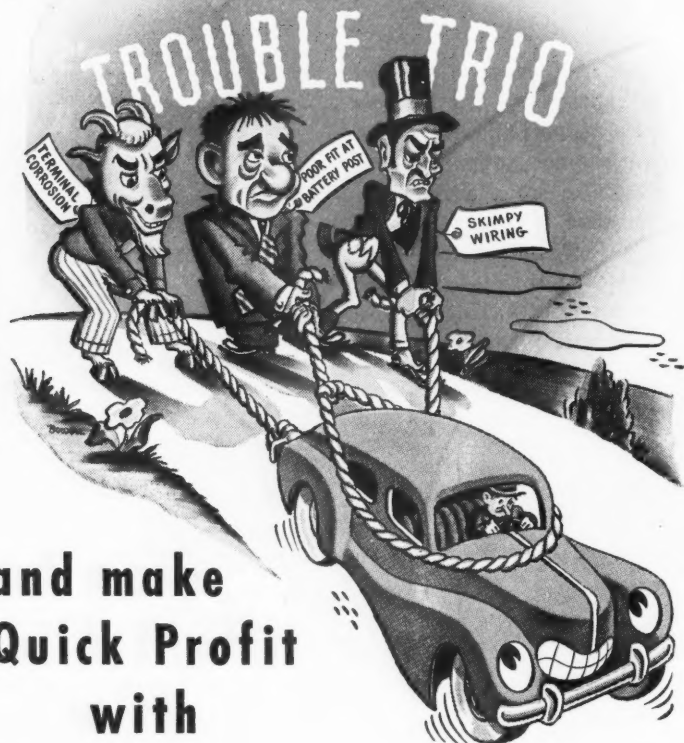
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AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

Knock out this



and make
Quick Profit
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BOWES *Corrodeless Terminal* **BATTERY CABLES**

Every motorist wants quick, easy starting . . . long battery life . . . full power from his battery. Therefore every customer you have is a prospect for Bowes *Corrodeless Terminal* Battery Cables. Here is an item you can sell fast—and make more profits and friends. It's a cold weather natural!

- **NO CORROSION**—Bowes *Corrodeless Terminal* Battery Cables simply can't corrode. You can assure your customers that their terminal corrosion troubles are over.
- **PERFECT FIT**—Positive and negative terminal posts differ in taper. Bowes Terminals are designed to give snug fit *all the way up and down*—giving a perfect contact between the post and terminal.
- **STURDY WIRING**—The larger core of the Bowes Battery Cable assures that *all* the power of the battery is delivered. No skimping—longer battery life.

Make Friends—More Profits—With
BOWES *Corrodeless Terminal*
BATTERY CABLES



BOWES "SEAL FAST" CORPORATION
INDIANAPOLIS 7, INDIANA

Ford Sales Chief Sees 2-Year Seller's Market

Cars in the lower priced field will remain in the seller's market for another 18 months to two years in the estimation of J. R. Davis, Ford vice president and director of sales and advertising. At a meeting of Canadian automobile dealers at Banff, Canada, he said that the buyer's market will arrive much sooner for higher priced cars and that already heavy trucks and certain makes of cars in the medium and high priced field are available for immediate delivery. He said that while there is no doubt that high prices have shortened the potential market for cars, prices still are lower compared to national income and cost of living than they were in 1939. He said that the three cars in Ford price field have increased an average of 103 per cent since 1939. He pointed out, however, that per capita income has gone up 141 per cent, whereas the cost of living has increased only 71 per cent since 1939. Because of the acute steel shortage he predicted automobile and truck production in the United States this year would not go over 5 million units, which would be a gain of more than 200,000 over last year, but far under the increase expected by the industry earlier. He also added that next year production might fall off from this year's level.



"She has something old, something new, something borrowed, and—him!"

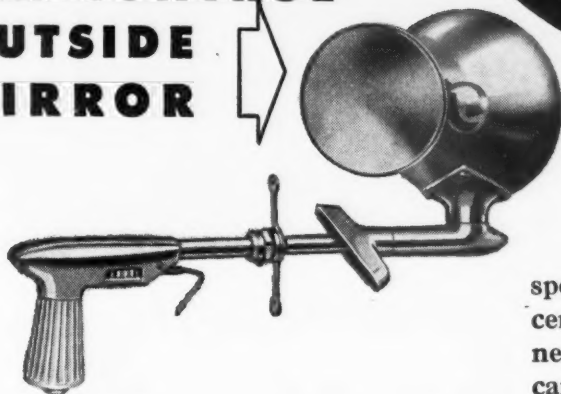
A winning combination...
the new

Guide

**SEALED-UNIT
SPOTLAMP**

plus

**INNER-CONTROL
OUTSIDE
MIRROR**



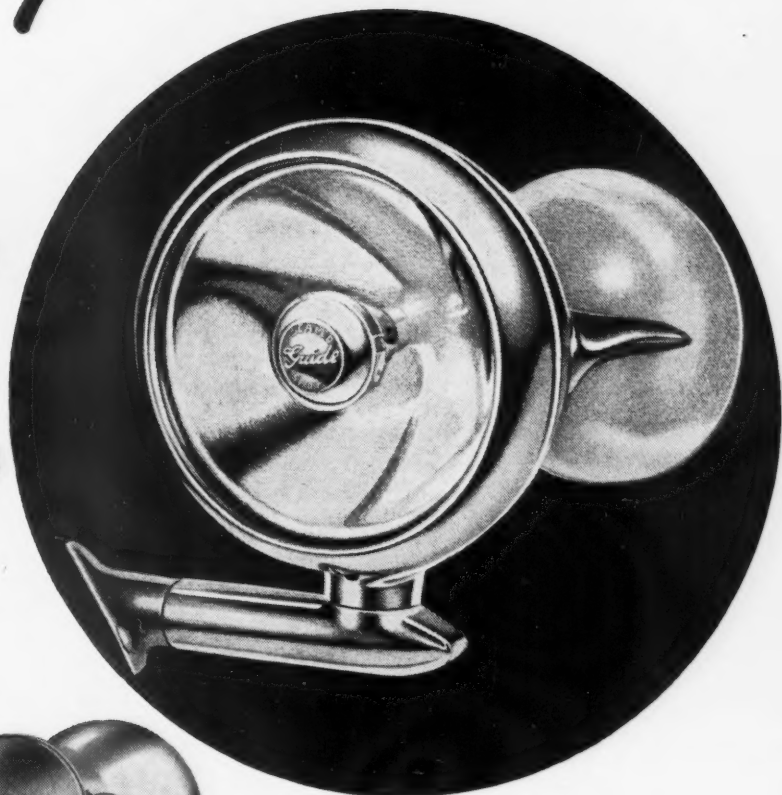
Here's a new and different spotlamp bound to win the preference of motorists. Besides having everything that drivers demand of a spotlamp, it has two important new features:

Sealed Unit Light Source—permanently protected from dirt, dust and traffic film, built like the Sealed Beam head lamp for maximum performance and long life.

Inner Control Rear Vision Mirror—integrally mounted on the spotlamp housing, and instantly adjustable to the correct angle by means of the spotlamp control handle inside the car.



GUIDE LAMP—A UNITED MOTORS LINE
 Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



It's a winning combination—a dual-purpose accessory that adds to motoring safety and convenience. Drivers *want* a spotlamp that can be depended on to cast a concentrated beam of light where and when it is needed. And they want an outside mirror that can be quickly adjusted, with no trial-and-error fumbling.

Easy to sell, easy to install without special tools and equipment. Mounting bracket fits most popular makes of cars without change. Right-hand and left-hand mountings available. Special models for 1948 Oldsmobile "90" Futuramic and all 1948 Cadillacs.



of you is really responsible?"

"I put the bearings in," said Tommy.

Pop turned to Larry. "You work with him tearing it down and checking. Let's do it fast."

"I told you that kid wasn't so smart as some people around here think. It takes a man to do a man's job." Larry turned to Tommy.

"Come on, kid," he said patronizingly. "Someone around here ought to show you the right way to do things."

Larry checked the engine and found that number one bearing was undoubtedly bad, so they drove the car into the shop and dropped the pan. As they slipped the bearing inserts out, Larry remarked,

"Probably the oil hole's clogged up in the crankshaft. You have to be sure all these passages are clean. Most kids like you just aren't careful enough to do good work."

Tommy said nothing.

"But it won't take me no time now the pan's down." Larry examined the insert. "That's funny," he said. "It seems clean, but we'll blow it out anyway. Always be thorough on jobs then you don't have no kickbacks. Like me."

Still Tommy said nothing.

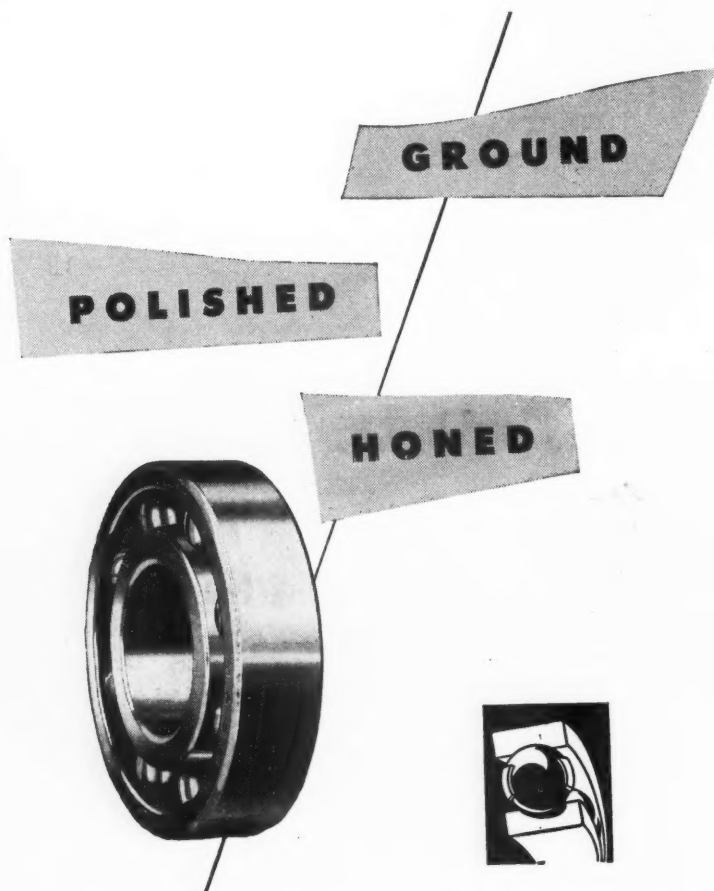
"The shaft's not scored," went on Larry. "So we'll just slip in another set of inserts and put it back together. Maybe the oil just didn't get there quick enough."

After the pan was back in place and oil in it, they started the engine and Larry took the car out for a road test. Within half an hour the Plymouth came back around the corner knocking just as badly as before. Larry got out scowling and immediately crawled under to drop the pan.

"What do you guess is the matter?" asked Tommy as Larry came out from under.

"I don't guess," said Larry. "I know." He got the mikes from the cabinet and waved them at Tommy. "These'll prove me right. When you burn out the same bearing twice like that, the shaft's out a round. That's the only thing it can be."

Twenty minutes later Pop sauntered out.
(Continued on page 116)



Only HOOVER does all three

Modern machines are being constantly designed for faster operating speeds. These higher speeds demand bearings with raceways so smooth as to reduce friction to a minimum. Grinding and polishing of ball bearing raceways is no longer sufficient. To provide the mirror-smooth surface necessary at high speeds, Hoover has developed a method of honing the raceways by production line methods. That is why manufacturers, everywhere, are finding that Hoover Ball Bearings have 30% longer life . . . 30% greater load carrying capacity . . . and a smoothness and quietness heretofore unheard of.

THE ARISTOCRAT
OF BEARINGS



Hoover

America's only Ball Bearing
with HONED RACEWAYS

HOOVER BALL AND BEARING CO. ANN ARBOR, MICH.



"Instead of saving time, the boys spend hours watching it work."

When Bigness Counts!

SIZE alone is not always proof of quality. But when a company grows to become the largest in its particular field through steadily increasing demand—there can be no more convincing evidence of the superior merit of the things it makes.

Ditzler is the largest *exclusive* producer of automotive finishes. More manufacturers of today's passenger cars, trucks and buses use Ditzler products than any other kind because of their *consistently dependable* performance for nearly fifty years. There's no stronger reason why Ditzler is best qualified to fill all your refinishing needs.

Ditzler Exact Weight Color-Mixing Service

● Ditzler has perfected a color-mixing service that is outstanding for accuracy, simplicity and thoroughness. Measurement by weight, which Ditzler pioneered, is not only the most accurate method but also the simplest. Pouring and weighing are in direct line of vision at eye level. Ditzler's method of agitation is positive and Ditzler's base colors and formulas are held to strict laboratory standards. To be right, mix the accurate Ditzler way!

DITZLER



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PITTSBURGH PLATE GLASS COMPANY

tered back into the shop and saw a peculiar sight. Larry was sitting cross-leggedly tapping on the floor with an open end wrench. He was obviously thinking.

"Is it all fixed?" said Pop. "Time's awastin' an' there's no profit in this job."

"These tough ones take thought," Larry growled.

"I can see why this job's not done," said Pop.

"All right, wise crack if you want to," said Larry. "It's your time we're wastin'."

"Ain't that the truth," said Pop. "An' which of us is wastin' it?"

"We've burned number one bearin' twice now," said Larry. "I guess the replacements must all

be faulty."

"The shaft out of round?" asked Pop.

"It's perfect," said Larry holding up the micrometers in the palm of his hand. "An' the oil hole's clean too. I've been plenty careful, Pop, an' I haven't let the kid near this job."

"Let's see the inserts," said Pop. Larry gave them to him and for a moment Pop turned them back and forth in his hand. "Did you run an oil test?"

"No," said Larry. "Just thought of it this minute."

"Nice thinkin'," said Pop. "Drop that number one main and show me the cap and bearin'."

"I ain't no kid, Pop. I've put plenty of inserts in."

"An' you wouldn't make the same mistake no kid would make either, would you?" said Pop when Larry came out from under with the front main cap in his hand. "Except the bearin' still seems to knock a little five hours after you've been workin' on it."

With an elaborate show of patience, Larry began to speak, "It don't make no difference how Plymouth inserts go in, the top and bottom half in the main is both the same size—identically alike—absolutely i-i-i . . ." He stopped and looked guiltily at Pop.

"Absolutely," said Pop. "Except the top one has an oil hole an' the

(Continued on page 118)

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West Coast: 1333 W. Olympic Blvd., Los Angeles.
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Please send me folder 11M and price list on LUBAID.

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"This is a fine time to be showing up for work!"

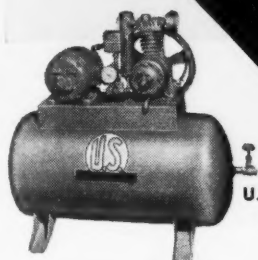


U. S. Model
MK 663

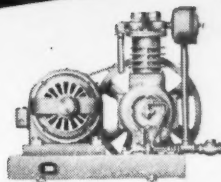
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WHEN YOU NEED IT
WITH

U.S.

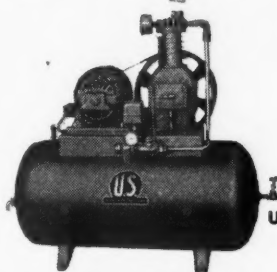
COMPRESSORS



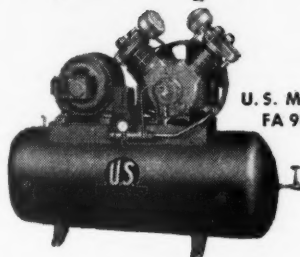
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LA 338



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U. S. Model
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Send for booklet: "How to Select an Air Compressor".



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AIR COMPRESSORS • HYDRAULIC LIFTS • LUBRICATING EQUIPMENT • PNEUMATIC ACCESSORIES

bottom one doesn't, and if a *kid* put the bottom half in place of the top, no oil would reach number one bearin' which feeds number one rod. But a *man* wouldn't make a mistake like that. The oil test would give a slight clue to the difficulty, wouldn't it? If an oil test had been made."

"I'll have the whole job done in

another hour," growled Larry. "You don't have to go gettin' sarcastic with me."

"I don't like to," said Pop. "But plain talk rolls off you like gravel off an over-loaded dump truck." He looked up as Cryle's thin form came through the big doorway. "Have it ready for you in about an hour," he greeted him cheerily.

"I thought it wouldn't be finished yet in this dump. Even in grammar school Tate was the dope of our class."

Larry immediately began to bristle but Cryle's manner changed quickly. His countenance cracked into a toothy grin. "Aw I was just foolin', pal." He slapped Larry on the arm. "Say, I forgot to bring my money and I want to call a friend. Lend me a nickel, will ya?"

Larry put his hand in his pocket. "I ain't got a nickel," he said sweetly. "But here's a dime. Call all your friends."

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2001-9 W. CARROLL AVE.
CHICAGO 12, ILLINOIS

West Coast Warehouse: 1511 Seventh Street, Los Angeles 14, California

HANK'S GARAGE



"She isn't the type of girl I'd care to date—she slaps."

Twitchell Reduces Prices On Seat Cover Material

E. W. Twitchell, Inc., Philadelphia, has ordered an approximate 10 per cent cut across the board in its Textilene Sunsore automobile seat cover materials. The price reductions apply to all shipments made after Oct. 1.

In spite of the price slash, Textilene Sunsore will be of the same quality, said E. W. Twitchell, company president.

The "V," or Vinyl-coated line, has been reduced seven cents a square yard. The "RL," Regular Lacquered line, has been slashed five cents a square yard, and the "UL," or Utility Lacquered line, 4¾ cents.

Not an ordinary Cotton Waste Cartridge ...



but **FRAM
CEL-PAK**
the finest
filtering media
in its class

Here's Why...

The Fram Cel-Pak Replacement Cartridge is the finest oil filter cartridge in its class because it's made with selected, spotless, starch-free long-spooler cellulose fibers, impregnated with Fram's exclusive, patented chemical treatment . . . uniformly packed under pneumatic pressure in a strong metal container.

The same amount of cellulose fiber is packed in every Fram Cel-Pak Cartridge to insure highest efficiency and to prevent channelling. Fram Cel-Pak Cartridges are uniform, weighed under a controlled process, chemically treated for better filtration and longer life.

Make this test! Don't take our word for it. Break open a genuine Fram Cel-Pak Replacement Cartridge. See for yourself how clean, how spotless, how uniformly packed the fibers are . . . you'll never find dirty waste, starch or foreign matter in a Fram Cel-Pak.

Cash In With Fram Cel-Paks! Millions of filter-equipped cars are on the road. Each one requires at least two cartridges a year. Always ask 'em, "How's Your Oil Filter?" and get that replacement business with Fram Cel-Pak Cartridges! There's a Fram Cel-Pak Cartridge for almost every oil filter made! See your jobber today! Stock up now for bigger than ever replacement profits. Sell Cel-Pak! Fram Corporation, Providence 16, R.I. In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.

FRAM *Oil Air Fuel* FILTERS

Automotive Taxes Topped \$3 Billion Last Year

The automotive industries continue to increase in importance and size. That statement is supported by statistics contained in the 28th edition of *Automobile Facts & Figures* issued by AMA. One noteworthy peak reached last year is not of any appreciable satisfaction to the industry, however. It deals with special motor vehicle taxes paid by American motorists last year and which exceeded \$3 billion for the first time in history. While all state and local taxes hit new peaks in 1947, by far the greatest increase was in Federal excise tax collections which jumped 32 per cent over 1946. Other new records reported by the statistical year-book include truck, bus and replacement parts production; employment and payrolls; dollar value of exports; vehicle mileage driven; car, truck, and bus registrations, and wholesale value of the industry's products. Another interesting fact

mentioned in the publication is that 4-door sedans account for the industry's largest production runs. It also notes an increase of more than 100 per cent in the percentage standing of convertibles and station wagons to all cars produced, being 7.2 per cent last year, compared with 3.5 per cent before the war.

Crosley Adds Rotators To Prevent Valve Wear

Crosley Motors, Inc., has incorporated exhaust-valve rotators in its engines as standard equipment, it was announced recently by Powel Crosley, Jr.

Developed "to correct a condition which has plagued the automotive industry for years," Crosley said, the rotators "prevent costly damage to valve faces and valve seats caused by the deposit of minute, glass-hard particles of lead or carbon."

Crosley explained that in the ordinary engine these deposits often lodge between valve seats and faces

in such a way that they are pounded every time the valve closes. This action, he said, finally burns away a portion of the valve seat, permitting escape of the hot explosion gases and eventual loss of engine power.

In the all-steel Crosley Cobra engine, this fault is said to be eliminated by the new rotator which turns the valve each time it opens.

General Motors Production Well Ahead of Last Year

Total production of automobiles and trucks by General Motors for the first nine months of this year was well ahead of the same period for 1947. The corporation built 1,621,043 units up to Oct. 1, compared with 1,372,650 for the same period last year. Production, however, was still behind the 1,865,410 vehicles built during the first nine months of 1941. Truck production is slightly ahead of 1941 with more than 381,000 units the first nine months of the year.

(Advertisement)

A Date-Buster Becomes a Rate-Buster



SORRY, HONEY-CAN'T DO- I'M BURROWING IN A BARREL OF WRENCHES AND THE BOSS IS BOILING. I'VE GOT TO FINISH THIS JOB IF IT TAKES ALL NIGHT.



LOOK AT YOUR WATCH, HONEY, AND CALL ME PUNCTUAL PETE! AND START LISTENING FOR WEDDING BELLS WHEN I SHOW YOU MY PAYCHECK!



TAKE A TIP FROM
RATE-BUSTING
RAY



BLACKHAWK

HAND JACKS • SERVICE JACKS • PORTO-POWER • RECK-RACK

Austin Presents New 90 HP Convertible

A club convertible model, with new lines, a curved windshield, and a 90-horsepower high-compression overhead valve engine, has just been announced by The Austin Motor Company, England's largest maker of large automobiles. Austin customarily identifies its cars by name, and calls this newest one, the A90, "Atlantic."

The "Atlantic" is a five-passenger club convertible, with push-button lowering and raising of the top. Windows in the doors are also operated hydraulically by buttons. The all-metal "forehead," several inches wide at the top of the windshield, is said to make the car extremely strong in the entire windshield zone. It holds two sun visors, and forms a weatherproof junction with the top in the raised position.

Road tests indicate that the car will go 90 miles an hour. Genuine leather is used for the upholstery, and padded leather is used on the



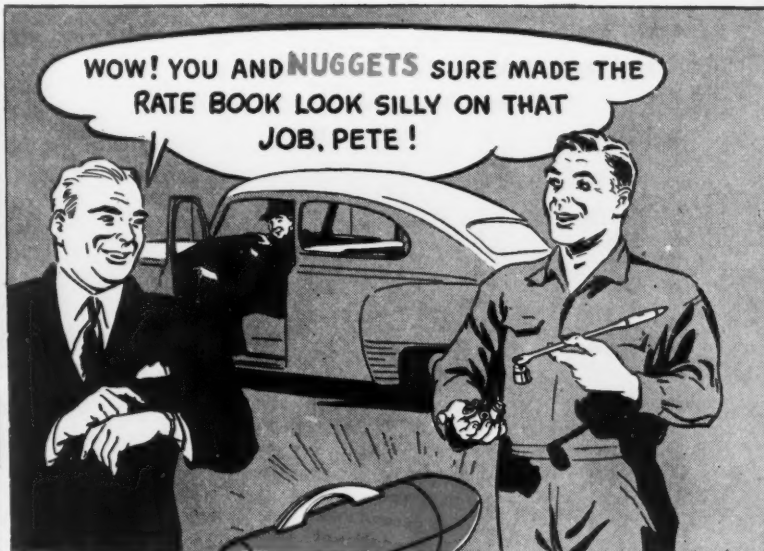
The Austin "Atlantic," a 90 hp club convertible which features luxury styling and appointments. It will go 90 mph.

sills of the doors. Instrument controls on the dash are centrally located and there are two glove compartments. Another feature is an 18-inch steering wheel, adjustable for reach. The gear shift is mounted on the steering column.

Front seats are individually adjustable with room for three passengers when the seats are locked in the same position. A large fog

light is located in the center of the front grille just above the bumper, and winking direction signals are combined with the parking and tail lights. Twin tail lights are recessed into the body, and the rear bumper extends to the side of the fender. Wheelbase is 96 inches and overall length is 14 ft, 9 in. New York delivered price including duty and Federal tax is \$3,975.

(Advertisement)



TOSS OUT YOUR MONEY-WASTING WRENCHES
BEAT THE CLOCK WITH NUGGETS
THEY PAY FOR THEMSELVES BY
RATE-BUSTING.



**NUGGETS DO MORE
WORK PER MINUTE**
• ONE drive handles all nuts from
5/16" to 1-1/4".
• LOCK-ON eliminates expensive
"specials"

**K NUGGETS SOCKET
WRENCHES**
REG. U. S. PAT. OFF.

MAIL THIS COUPON TODAY!
BLACKHAWK MFG. CO. DEPT. J6118 MILWAUKEE 1, WIS.
Please send me RUSH your FREE booklet on Rate-Busting Nugget
Socket Wrenches.
Name.....
Address.....
City..... State.....

The Ready Wrecker .

Continued from page 55

sure that all the tow truck tools stay where they belong is to paint the handles with some identifying color. Then lock the tool box. Bolt it to the floor of the truck. Hide one key in the glove compartment and give a duplicate key to the man who drives the truck. Most mechanics don't intentionally keep the tools, but good intentions are worthless

when a much-needed wrench is missing from the toolbox.

8. A small hydraulic jack of at least three ton capacity should be kept on the truck for tire changes on the road, or other jobs which require the use of a jack. A combination lug wrench is also handy, since many customers no longer co-operate by providing their own.

9. Lighting is of particular importance on a towtruck when a shop offers all night service. A spot-light on the cab and a good flood-light on the rear are the only extra lights necessary. However, it is a good safety measure to keep a set of flares available for wrecks which must be left out on the road overnight.

10. A compressed air storage tank and a long air-hose is a good set-up to have on the truck. Quite often a tire with a slow leak can be pumped up so that it will hold out until the car is driven into the shop, thus saving a tire change in the snow. Compressed air is also useful for drying off a wet distributor or spark plugs. The tank can be filled from the shop air outlet before the truck goes out on the road.

11. A blow torch is well worth the space it takes in the truck. In extreme cold, ice can impede the progress of a job, and in some cases, can be the original cause of the trouble. For instance, when an exposed mechanical brake cable becomes coated with mud and is left overnight to freeze with the emergency brake on, a blow torch may be the best method of thawing it out in a hurry.

12. And how about the man on the job? If he is exposed to the cold for an hour or so working on a car, he may have to stop every few minutes to warm up. In the cab should be two forms of heaters—one, a standard car heater, and the other a thermos bottle filled

(Continued on page 125)



**Better Flame Control
means Better Welding**

... AND THE
NEW AIRCO 700
GIVES "BEST"
FLAME CONTROL



The Airco 700 Torch is suitable for 90% of your welding and brazing work. It is available with tip assemblies ranging from Nos. 00 through 10. Each welding tip is assembled with an individual mixer drilled for that particular tip. This means finer flame control... there is no sputtering—better welds result. When equipped with a multiflame tip, there is no torch to compare with the "700" for silver and aluminum brazing.

In addition to better flame control, the outstanding features of the NEW "700" torch are: wide operating range... perfect balance... and low maintenance cost.

If you would like more information about this torch, or a free demonstration right in your own shop, address Dept. MG 9201, Air Reduction, 60 East 42nd Street, New York 17, N. Y. In Texas: Magnolia Airco Gas Products Company, Houston 1, Texas. On West Coast: Air Reduction Pacific Company, San Francisco 4, California.



AIR REDUCTION

Offices in All Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases... Carbide... Gas Welding and Cutting Machines, Apparatus and Supplies... Arc Welders, Electrodes and Accessories



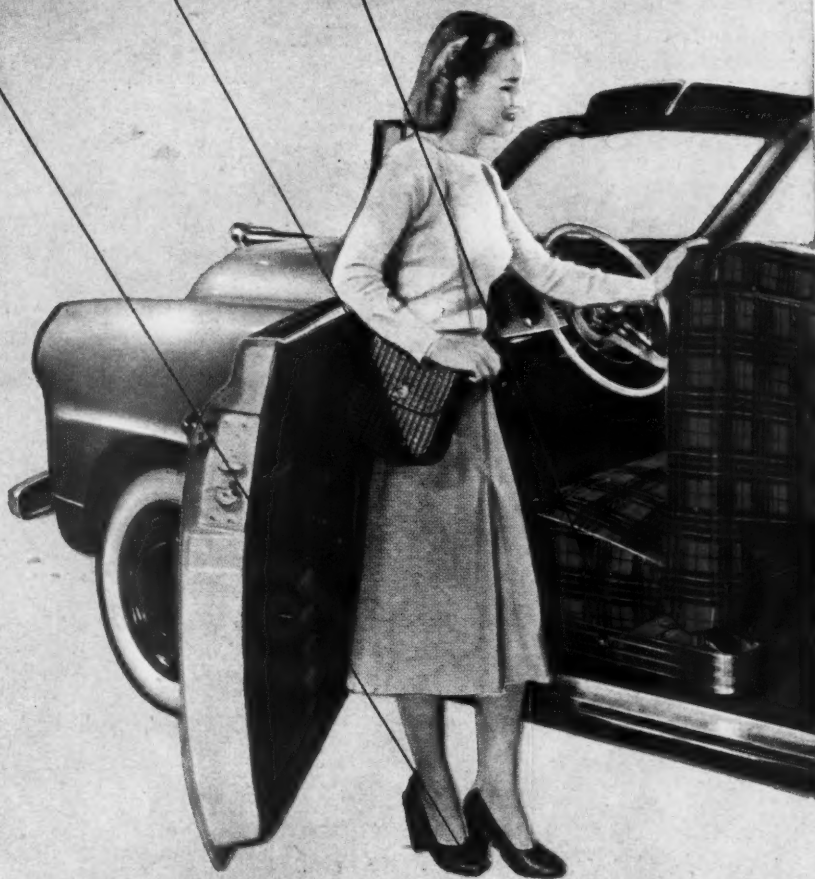
SARAN

BY NATIONAL

Made For Wear . . . Styled For Sales.

Wherever fabric beauty must be practical, *saran* is the answer. Here, in the newest seat covers, are color and beauty that will withstand rain, sun and rugged usage. *Saran* won't snag, sag or scuff . . . providing seat covers that always look new. And, too, this amazing fabric permits the easy removal of surface dirt and dust. That's why *saran* is the first choice in seat covers for motorists everywhere.

Think of the sales opportunities that *saran* seat covers can open for you! Here are beauty and color inherent in the fabric itself—in an eye-catching assortment of weaves and patterns—with a wearability story that is really a stopper. You can build new sales by joining the swing to seat covers made of *saran*, a great name in modern textiles. Ask your supplier today!



REG. U.S. PAT. OFF.

THE
National plastic products company

ODENTON • MARYLAND

New York: Empire State Building • Los Angeles: Bankers Building



SARAN BY NATIONAL denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's *saran*, and supplied to mills, weavers and other fabricators.

This **FULL PAGE** advertisement in two colors in the November 20th issue of **THE SATURDAY EVENING POST** will be the first in the 1948-9 campaign.

Other advertisements will appear in *The Saturday Evening Post*, *Collier's*, *American Magazine*, *Cosmopolitan*, *Pathfinder*, and a selected list of farm papers.

THE SATURDAY EVENING POST

SMART DRIVER-SAFE TRACKS VBAR CHAIN...

You'll discover driving over ice and snow is easier and safer when you use WEED AMERICAN V BAR-REINFORCED TIRE CHAINS. These new, improved chains give you better stop-and-go control. Remember this—safety is no accident. So, use WEED AMERICAN V BAR chains. They...

**Smart Easier • Stop Shorter
Hold Straighter • Last Longer**

BECAUSE OF...

**Two-Way Grip, Right and Left
288 Gripping Points • Meet and Toe Action**

Feel Safe. Be Safe. Ask for WEED AMERICAN V BAR-REINFORCED Tire Chains early as supply is still limited. Get WEED Zip-On Tire Chain Appliers, too. Only 40¢ they pay for themselves every time you put chains on.

AMERICAN CHAIN & CABLE COMPANY, INC.

ACCO

In Business for Your Safety

NEW WEED V BAR TIRE CHAINS

Safety for your customers—Profits for you

Selling "Safety" is always good business. WEED has been helping you to promote safety for years by advocating the use of tire chains. This year it's the new WEED AMERICAN V BAR-REINFORCED TIRE CHAIN—with user advantages as shown in the advertisement above. Remember that WEED offers you the 3-WAY PROFIT PLAN:

- 1. SALES**—Every sale of WEED AMERICAN V BARS means a satisfied customer as well as a profit.
- 2. SERVICE**—Greatly simplified by the new WEED Zip-On Tire Chain Appliers. And Tire Chain service is good business—especially when you sell the appliers.
- 3. REPAIRS**—With WEED Chain repair tools, chain repair is quick and easy—therefore profitable.

ACCO



York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

**AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE**

In Business for Your Safety

Getting the Wrecker

Ready for Winter Service

Continued from page 122

with hot coffee. The truck is usually equipped with a heater, but the coffee is generally overlooked as a morale builder. By providing the truck with a thermos bottle, the mechanic can stop off somewhere to have it filled on the way out to the job. This may discourage stopping in the middle of a long job to run several miles into town for hot coffee.

Road service is profitable so long as no time is lost by unnecessary trips back to the shop for forgotten items which belong on the truck at all times. When experience proves that a certain tool is used frequently on service calls, it pays to have one available for the use of the mechanic on the tow truck.

MOTOR SALES



"How much are those monthly payments again?"

Isherwood Retires After

34 Years With AC

Wilson S. Isherwood, general sales manager of AC Spark Plug division of General Motors, has announced his retirement. As AC's first and only general sales manager, Isherwood joined the organization in 1914, six years after its founding. An outstanding authority in the United States on sales and distribution of automotive and aircraft replacement parts, he played a leading role in AC's development.

WITH EVERY FUEL PUMP SALE OR SERVICE

THIS

SELLS EASILY

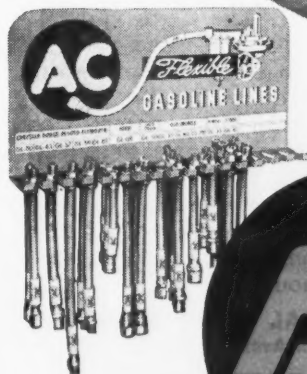
They belong together. They work together. They *sell* together—easily. That's why AC now gives you AC Flexible Gasoline Lines. You can *sell one every time* you sell or service an AC Fuel Pump—and there's an AC Fuel Pump on nearly every car on the road.

OTHER FLEXIBLE LINES, TOO

To let you cash in on *all* the fast-moving flexible lines opportunity, AC also gives you Oil, Grease, Vacuum, and Oil Filter Lines. They, too, sell on *inspection*. Just look for signs of burning, chafing, cracking, checking, and kinking.

Now in Stock at Your AC Wholesaler

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION



HERE'S YOUR BEST BUY

The Wall Merchandiser (FM-1), shown at the left, gives you all the lines you need for 85% of the market. All lines are "tailor-made," ready to install.

AC Flexible LINES

which was now used as a paint shop.

In 1947 Shoff built again, this time adding a piece 35 ft. x 85 ft. to the front of the older buildings. A showroom, 24 ft. x 76 ft., was erected at the very front of this structure looking forward to the day when Shoff may become a car dealer. Today he employs 11 men. This total is made up of four body

men, including the manager; six mechanics, including the service manager; and one bookkeeper, Charles Hirsch, who acts as general manager whenever Shoff is absent.

Shoff has achieved success in spite of an unfavorable location in part because of his operating methods and the type of service he has

rendered. He gave the customer a reason for wanting to come back.

The first time a customer enters his shop Shoff takes pains to sell himself to that man. "Sell yourself first, then sell your service," he explains. "Once this step is accomplished, the man will keep coming back and will remain a steady customer and booster." He adds that as far as getting along with him after that he goes by the motto that "The customer is always right—the only thing is that you have to be diplomatic when it is necessary to prove that he is wrong."

Another factor considered highly important by Shoff is the original diagnosis of what is wrong with the car. The customer is then informed clearly as to just what work is needed to insure a satisfactory job. In many cases where the customer wouldn't agree to the amount of work needed, Shoff has turned away the entire job. While he may have lost a few dollars, he has avoided sending a faulty car out of his garage. And the customer goes away convinced as to his sincerity.

Another reason that Shoff is so particular about having a clear understanding with the customer about a specific job is that once the job is completed, he stands behind it one hundred per cent. "I advertise guaranteed service," he states, "and my customers have

(Continued on page 128)



**FIT IT RIGHT
WITH A CENTRAL MIKE**

**CENTRAL MIKE SAYS:
"HERE'S THE MARK OF A GOOD
MECHANIC!"**

Set No. 745RL—Outside Micrometers. Range: 0 to 4 inches by thousandths. Four micrometers, complete with Ratchet Stops, Lock Nuts and Standard Test Gauges in DeLuxe Plush-Lined Case.



Set No. 808—Inside Micrometer. Range: 1½ to 8 inches by thousandths. Complete with Extension Handle in DeLuxe Plush-Lined Case.

There's a Central Micrometer for every requirement. See your jobber or write for catalog.

Central Micrometers complete the tool box of a good auto mechanic. The Certified Accuracy of these fine tools helps him turn out accurate work the first time, every time.

With Central Micrometers each measurement is accurate, each fit true, each machining job right to size. That's why experienced men in successful shops use Central — the fastest selling Micrometers in the automotive field throughout the world.

THE CENTRAL TOOL COMPANY
462 Wellington Avenue, Cranston 10, R. I.

CENTRAL
Certified Accuracy
MICROMETERS

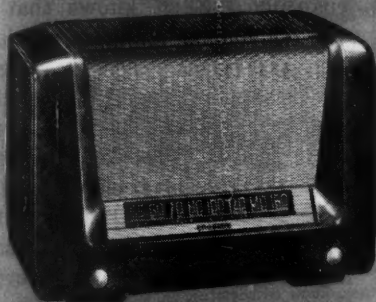
FOR HALF A CENTURY SPECIALISTS IN FINE MICROMETERS



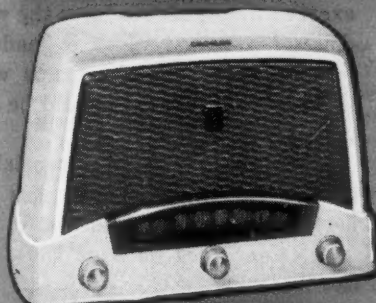
"This must be the place!"



CROSLEY 9-122W . . . And all through the house . . . mellow tone, smart beauty. Lovely ivory finished plastic. AC-DC.



CROSLEY 9-113 . . . A gift that keeps on giving all year 'round. Ornamental walnut plastic cabinet. AC-DC.



CROSLEY 9-104W . . . Dainty all-'round beauty. Ivory finished plastic. AC-DC. No better way to say "Merry Christmas!"



CROSLEY 9-119 . . . Who wouldn't be glad to find this trim, compact beauty under the tree! Walnut plastic, AC-DC.

Extra Profits

**FOR YOU
THIS CHRISTMAS**



IN THESE

ALL-NEW 1949 CROSLEY RADIOS!

**Styled right...priced right
for every customer you serve!**



Make your Christmas business *bigger* this year with a complete stock of all-new Crosley radios! They'll be in hot demand for Christmas giving . . . and there's a model styled and priced to fill the gift needs of every customer. *Plus* generous profits, you'll discover that your display of Crosley radios builds store traffic, increases sales in other lines you handle. Get set now for the holiday buying spree. Order a complete stock of Crosley radios from your Crosley distributor!



your prospects are good!

THEY'RE PRE-SOLD BY POWERFUL CROSLEY ADVERTISING IN NATIONAL MAGAZINES . . . You tie in locally with sales sparking promotion aids—ad mats—radio spots—displays—literature—available on Crosley's generous cooperative advertising plan.



CROSLEY

Division—**AVCO** Manufacturing Corp., Cincinnati 25, Ohio
Shelbador Refrigerators • Frostmasters • Ranges
Radios • Radio-Phonographs • Television

learned that they can depend on getting it. I never skimp or haggle, and I have lost as much as \$100 on a single transaction, just to back my claim to the limit."

There is the old saying "It's the little things that count," and it's the "Little Things" that get special attention at Shoff's. For instance the mechanics are all train-

ed to look for little things wrong with the car, items that aren't on the list to be repaired, but that probably cause annoyance to the owner. A squeaky door is an example. The mechanics fix up the trouble but don't mark it on the bill, and they never mention it to the customer. Neither does Shoff, but he knows that the man will

notice it and be grateful to them.

As another service Shoff's has a man who goes and gets cars that are to be worked on, and then returns them when completed. This is an especially important service at Shoff's with its relatively inaccessible location. "People don't impose on this service and whenever possible they bring in their own cars," Shoff asserts.

Another "Little Thing" in service at Shoff's is the personalized attention given to certain jobs. For example a traveling salesman comes in with a repair job and asks for a rush job. Shoff knows that this man depends on his car for his living, and he makes every effort to give this job priority. In addition the car is checked extra carefully to be sure it is in proper shape to meet the special demands that extensive traveling makes upon it.

Whenever a mechanic finds something wrong with a car he reports to the service manager who immediately contacts the owner by phone, if possible. If the owner isn't available by phone he is told about the additional trouble when he comes for his car. No "pressure" is exerted to get him to have the work done; but every effort is made to be sure that he understands what is wrong and why it should be corrected.

Good equipment is essential to good service, and Shoffs has the best and latest. In addition to mo-

(Continued on page 130)



HERE IS GOOD NEWS! Johnson Bronze main, conrod and camshaft bearings . . . for all popular makes of cars and trucks can be secured *from stock*. This includes both standard and the usual range of undersizes. Every bearing is made to the same precise measurements and of the same top grade metals as original equipment. Why not check your needs now? We will ship your order the same day it is received.

The same excellent delivery is likewise available on starter and generator bushings; water pump and distributor bushings and all chassis bushings and bearings. Our new catalogue lists and describes a complete automotive bushing and bearing service. Write for a copy today.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.



"I was looking where I was going, but where I went wasn't where I wanted to go."

It's Here

SPEAKER

ALL-WEATHER RADIATOR FRONT



**No. 1
Contender
for
FIRST
PLACE**

in your ACCESSORY SALES PARADE!

The SPEAKER ALL-WEATHER RADIATOR FRONT promises to be the fastest selling automotive accessory you've ever laid eyes on. Everyone who sees it wants it because it's the most necessary piece of automotive equipment on the market today. Truthfully, there's nothing else like it.

Here's what it does . . . shields radiator and motor from frigid blasts in cold weather; screens out and brushes off bugs which otherwise clog radiator cores in warm weather. Yes, it's a dual-purpose, completely concealed, under-the-hood accessory that gives year 'round car protection, greater driving comfort, increased gasoline mileage, decreased oil consumption and lower repair costs.

You don't have to tell customers how the SPEAKER ALL-WEATHER RADIATOR FRONT operates. You can actually demonstrate it . . . for Speaker has available a sure-fire, double-action display unit that's an eye catcher and sales clincher, for use either in your sales room or service department.

It's made of first quality, non-rusting, corrosion-proof aluminum, to last the life of a car. Durable Pyroxylin winter shield, tightly wound on spring roller, is quickly raised over the desired radiator surface by pulling dash or glove compartment control knob (mounting optional). Stiff bristle brush attached to top of roller whisks bugs and dirt from screen surface. Snug fitting wiper attached to bottom of roller housing cleans mud and dirt from winter shield. Made in sizes to fit 95% of all late model cars and trucks. Simple and speedy to install. No special tools required.

To insure a mass demand for the SPEAKER ALL-WEATHER RADIATOR FRONT . . . to guarantee you fast sales, rapid turn over the year 'round, attractive advertisements with plenty of sell will appear in such consumer publications as the Saturday Evening Post, starting in the September 25th issue and continuing through the fall months. And the unit offers more than fast sales . . . it's priced to give you a better-than-average margin of profit. Combine these features and you've got a natural profit maker for immediate sales. Remember: it's a dual-purpose WINTER FRONT and SUMMER BUG SCREEN.

You can make the SPEAKER ALL-WEATHER RADIATOR FRONT pay bigger dividends for you by placing your order at once. Decide to speak for A SPEAKER today. Order from your Jobber — or direct if he can't supply you.



**Completely
Controlled
FROM THE
DRIVER'S SEAT**

U. S. Patent No. 2,237,986

**DOUBLE-ACTION
SURE-FIRE
DISPLAY UNIT**

**IN YOUR SALES ROOM AND
SERVICE DEPARTMENTS**



J. W. SPEAKER CORPORATION

3063 NORTH WEIL STREET

MILWAUKEE 12, WISCONSIN

In Canada: Canadian Speaker Corp., 647 Vltre St., W., Montreal 3, Quebec

Makers of the world-famous Complete Line of Speaker Match Patch Tube and Tire Repairs

tor tune-up and general motor repair work, the shop is set up to do wheel aligning, frame straightening, wheel balancing and body and paint work. Special equipment includes a motor-tester, a quick charger, a frame aligner, paint sprayers and electric and acetylene welding outfits.

Parts are an important adjunct

to a service shop, and Shoff's stocks \$8,000 in rebuilt motors and parts, which is quite a bit for an independent service shop. In addition a man makes three trips daily to the various dealers for parts.

One way to counteract an unfavorable location would be by extensive advertising, and Shoff has long been aware of this. However he

has gotten much of his advertising through "word of mouth" by satisfied customers. Some of the original customers he started out with in his old location have not only stuck with him, but they also have told others about him.

Shoff has known better than to sit back and wait for the customers to drift in, and he is a heavy advertiser in the local paper. Here too he puts in the little extra effort that spells the difference between success and failure. He strives to have each ad different from any other so that it expresses the individuality of his business.

For the benefit of the traffic on the highway which passes near his place of business, Shoff has a large neon sign that he keeps going all night long. The road goes from Benton Harbor to Niles, Mich., and South Bend, Ind., and lots of people see the sign and remember it, reports Shoff. As an added effort Shoff gives away key rings, pencils and other souvenirs with his name on them.

Another things that keeps his name before the local public is his active interest and participation in flying. He is dealer for Swift airplanes and maintains a demonstrator at the airport. Every now and then he takes one of his customers up to see what Benton Harbor looks like from above. Flying is still new and novel enough for most people so that this really sets him apart from his competition.

(Continued on page 132)

for all window leaks

SEALZIT

LIQUID GLASS SEALER

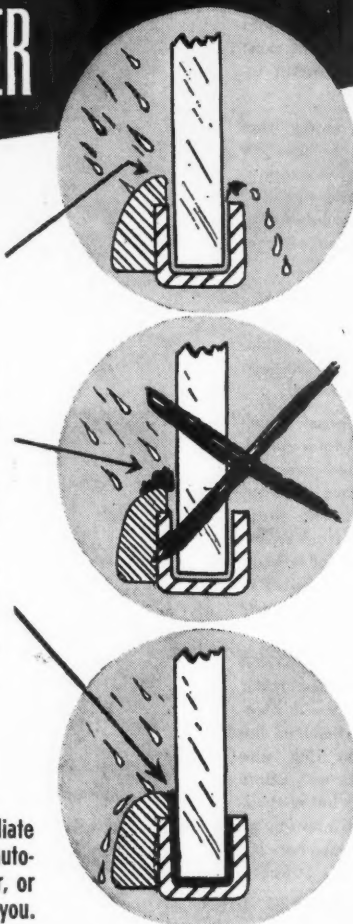
CAR WINDOWS LEAK when the rubber moulding draws away from the glass. This is due to both vibration and atmospheric conditions.

OUTMODED METHOD consists of applying an overlap. The gummy overlap tends to draw off due to vibration and will expose the leak again.

WINDSHIELD SEALZIT SEEKS OUT AND SEALS LEAKS. Easy to apply . . . WINDSHIELD SEALZIT is a colorless and transparent liquid glass seal. No muss—no fuss to sealing window leaks both economically and efficiently. Dries quickly . . . remains pliable. Lasting results as WINDSHIELD SEALZIT clings to both glass and moulding. It does not peel off or break away.



Available for immediate delivery from your automotive supplies jobber, or write for source near you.



Manufactured by
FOSTER & KESTER COMPANY, Inc.
 Automotive Products Division
 Reading North Broad St. Station Bldg.
 PHILADELPHIA 32, PENNA.



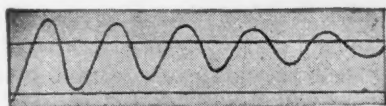
"I was thinking, dear, maybe if you sat up at the other end—"

Dealers:

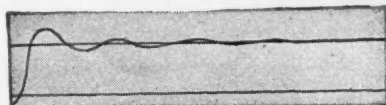
This message is appearing in current
Fleet Publications to produce profit for you.

When a Man is "All In"

*He Can't Go
All Out for You*



STANDARD TRUCK CUSHIONS — Poor take-up of shock followed by rough rebounds. Drivers take up to 50,000 shocks like this a day.



BOSTROM HYDRAULIC SEAT—Soaks up the initial shock and levels out—like a passenger car ride.



THESE ENGINEERING RIDE-GRAPHS

tell you better than words why . . . Safety slips! Schedules lag!

Equipment and cargoes take abuse!

Yes . . . Bostrom hydraulic seats more than pay for themselves by reducing driver fatigue. You get additional savings by cutting seat repair bills. Ask your dealer for a demonstration. For free folder,

"12 Eye Openers Concerning Truck Seats" write:

BOSTROM MFG. COMPANY
133 West Oregon Street • Milwaukee 4, Wisconsin

MOTOR AGE, November, 1948



*There is NO Substitute
for a Bostrom Ride!*

BOSTROM

Bostrom Hydraulic Seats now standard or optional equipment on the following trucks: GMC, Diamond T, Federal, Hendrickson, Peterbuilt, Walter, Ward La France, FWD, Dart, Oshkosh, and Coleman. Specify Bostrom Model 47 Seats on your new trucks.

An attractive shop inside and out appeals to customers, and Shoff's building is exceptionally attractive. The grounds are laid out in lawn and trees. The shop inside is bright and clean. All work benches have been eliminated, and portable steel work tables have replaced them. Not only are these more convenient for the men, but they do

away with the accumulations of junk and dirt that were inevitable with the stationary bench. Plenty of windows, aided by modern fluorescent lighting, provide ideal working conditions as well as adding to the appearance of the interior. A forced ventilation system with drop tubes to each stall is to be installed this summer.

Satisfied employees are important to Shoff and he has given careful attention to morale. For one thing the men work regular hours that they can depend on, and second they work on a flat rate system that enables the better worker to make more. The men are very well satisfied with the arrangement.


The men get 50 per cent of every service dollar and two per cent on parts sales. At Christmas every man gets \$25 for every year he has spent with the firm up to five years. Every man with one year or more with the firm gets a week's vacation with pay.

In building up his present successful business Shoff has found that there were certain advantages in his location that he wouldn't have had in a downtown location. One of the most important, and most obvious, is roominess. Customers like the fact that they can drive up and park without a lot of trouble. There is no fender scraping and scramble for parking places, and as a result there is less tension. Customers are bound to be more relaxed, and as a result they remember Shoff's as a pleasant place they want to return to.

Shoff's is separated from the highway by a narrow "Island" of ground.

Another advantage of plenty of room is that it gives Shoff the opportunity to do just what he wants without the limitations he would encounter in the city. As a result he will soon have a beautiful and unusual layout.

**THE STANDARD CLUTCH FACING
ON MAJOR 1947-48 CAR MODELS**



Johns-Manville STM Clutch Facing

**STOCK THE
FACING
THAT'S
STANDARD**

5 million Johns-Manville STM clutch facings were delivered to automotive manufacturers in 1947

Distinctly different from any other Clutch Facing . . .

STM facings are resin-bonded, hot-pressed, impregnated with brass . . . have higher friction stability, greater strength . . . are made of J-M high-performance brake-block materials.

Johns-Manville
Asbestos
BRAKE MATERIALS

• BRAKE LININGS
• BRAKE BLOCKS
• CLUTCH FACINGS



"Here's Senator Wynn Bagg's report on the paper shortage."



Hudson Custom Commodore Sedan pictured in the luxuriously modern Hotel Statler, Washington, D. C.

Here's a long look ahead— the modern design for '49 new **Hudson**



Illustrated above—Interior, Hudson Commodore Club Coupe, typical of the roomy, luxurious interiors in all New Hudsons.

TRY AUTOMATIC GEAR SHIFTING in forward speeds as provided by Hudson's Drive-Master transmission—by far the easiest of all ways to drive. You can accelerate as long and as fast as you like in pick-up gear, then lift your toe momentarily, and you're in high. The shift into high comes *only* when you are ready! Button control on the instrument panel provides instant change to conventional driving if ever desired. Drive-Master transmission is optional on all New Hudsons at small extra cost.



HUDSON FLOORS are recessed down within the frame (shown above), full-height seats are lowered, so you get more than ample head room in this car with the new, lower center of gravity.

YOU RIDE DOWN within a base frame (shown above), and rear seats are positioned ahead of the rear wheels so that full body width becomes available for wonderfully roomy seats—four inches wider than the car is high. Box-section steel girders encircle and protect the passenger compartment.

See it today—the new Hudson with the “step-down” design that is years ahead of the parade—the design that provides streamlined beauty, roominess, comfort, riding qualities and safety available in no other type of automobile!

ONLY once in a blue moon does a car step so far out ahead that it is a *protected investment* in motor car value. Accept an invitation to see just such a car—the New Hudson with “The modern design for '49,”—and for years to come!

Here is true streamlined beauty—a stunning combination of free-flowing, low-built lines that develop naturally out of a recessed floor which is the key to a basically new and exclusive design principle.* The New Hudson is the only car you *step down* into.

The development of a “step-down” zone in an exclusive, all steel Monobilt body-and-frame† permits Hudson to build the *lowest car on the highway*—only five feet from ground to top—while maintaining *more* interior head room than in any mass-produced car built today! But no amount of just looking at this gorgeous streamlined beauty—as inviting as it is—can equal the thrill of a Hudson ride!

* This new design principle is fully explained in an illustrated booklet available without charge at the nearest Hudson dealer's.

† Trade mark and patents pending.

Hudson has a hug-the-road way of going on every conceivable kind of highway. Once people see how this car takes even the sharpest curves, it will just naturally spoil them for any other type of automobile!

This remarkable ride is largely due to the fact that the New Hudson provides the lowest center of gravity in any American stock car—yet road clearance is ample! *It is a widely recognized fact that the lower to the ground a car can be built, the more stability it will have and the safer it will be.*

People sense a delightful conformity to the road the minute they begin to ride, and this stability, plus the protection of riding encircled by a sturdy box-section steel frame, gives a grand feeling of safe well-being. This feeling is further enhanced by the ease with which this car is operated, and the restful quiet with which Hudson glides along—thanks to the superb sound control engineered into this advanced automobile!

These sensational advantages have established the low, wide and handsome Hudson as America's only *really* modern motor car . . . a car that is winning the approval of more thousands of motorists every day. Hudson Motor Car Company, Detroit 14, Michigan.

Eight body styles in Super Series and Commodore Custom Series. Your choice, 121 h.p. all-new Super-Six or 128 h.p. masterful Super-Eight engine. Super-Cushion tires. Ten rich body colors. Two special colors or five two-tone combinations—white sidewall tires—at extra cost.

**THE ONLY CAR YOU STEP
DOWN INTO**



wire between your thumb and fingers, if the insulation cracks or splits, new high tension wires should be installed (charge extra to install new wires).

Cooling system: Drain the radiator and put in suitable anti-freeze. Examine the hoses. Sometimes a very effective demonstration can be set up for the customer: Drain

the radiator by removing the lower hose quickly and slipping a clean cotton bag such as a salt bag over the end of the hose and let the block drain through the bag which will retain the mud and muck from the block. Turn the bag inside out to show the customer how dirty his cooling system has become. (Charge extra to clean and flush the blocks.)

MOTO-VIM Hailed Amazing Chemical Tune-up Penetrant

EXCLUSIVE LONG LASTING BENEFIT GUARANTEED

Science and invention have created countless automotive miracles. But never has there been a method to quickly and effectively lick a great range of maintenance work except through the drudgery of human hands.

Now comes MOTO-VIM to fill that great need!

MOTO-VIM Does This and MORE

IMPORTANT! Your customers must not be allowed to miss the benefits of MOTO-VIM through the unwarranted assumption that it is "just another penetrant or additive."

Yes, MOTO-VIM accomplishes the popular services of common preparations — but MOTO-VIM does even MORE! Its greatest superiorities over such compounds are (1) its long-lasting, continuing benefits and (2) its speed and the dramatically noticeable improvements it brings to mechanical and electrical assemblies. It does not burn out under high operating pressures.

Uncorks Profits For You

No longer need customers wonder "Why pay good money for tune up jobs that don't seem to make any difference!" MOTO-VIM gives the average car an astounding surge of power and improved performance which the customer can hear and feel!

Sure, You make handsome profits by selling quart-size MOTO-VIM tune-ups every 5000 miles. But your big profit is in the snow-balling of customer satisfaction.

How to Use MOTO-VIM

Break in new cars—soup up the old ones, even out rough motors, by following simple directions on MOTO-VIM'S label. MOTO-VIM removes carbon, releases sticky valves, stops oil pumping in non-egg shaped cylinders, increases compression, and zips up starting and pick-up.

Proof of Increased Compression						
	1	2	3	4	5	6
BEFORE	87	95	62	51	94	85
AFTER*	104	109	110	109	110	112

*Readings taken 2000 miles after MOTO-VIM — on a 1941 DeSoto.

MOTO-VIM thoroughly cleans carburetors, generators, starters and heaters. (It's used in electric clocks, too.) It eliminates carbon, corrosion, road tars and foreign substances and releases rusty, frozen parts in unmatched jig time. It is non-injurious to skin and clothing; contains no acid, sulphur or oil and is the only harmless liquid in which an electric motor can be submerged.

Testimonials Pour In

"... using MOTO-VIM in our municipal garage... on police squad cars and other city equipment"—Service Mgr. of a Wisconsin municipal garage.

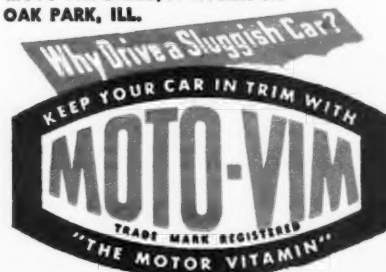
"... after several laboratory tests... we have found MOTO-VIM above or equal of anything on the market today"—Ed Bayro, Pres., DeSoto Service and Parts Mgr.'s Assoc., Chicago region.

"The enthusiasm of our mechanics is growing with the use of each bottle..." E. C. Kribball, Service Mgr., Roy Crist Motors, Inc., Blue Island, Ill.

Guaranteed by Cash Refund

Satisfy your customers... increase your bank account. Write MOTO-VIM today (to distributors: a few territories are open).

MOTO-VIM SALES, 11 W. Lake St.
OAK PARK, ILL.



Spark plugs: Clean and regap the spark plugs, or install new plugs.

Carburetor: Adjust idle mixture, idle speed and check the choke. Pay particular attention to the linkage. Here you're after a freely operating choke, whether automatic or manual, one which doesn't stick or hang up.

Generator: In most cases the generator commutator can be cleaned up by using a little sand paper, while on the car. Clean up the commutator and make sure the brushes are not stuck or badly worn. If it is necessary to remove and overhaul the generator, charge extra labor.

There will be some variation in time between the different makes and models, but in general about two hours is all that will be required.

41 Million Vehicles

On the Road Today

Motor vehicle registrations in the United States this year will exceed 41,000,000, topping all previous records, according to preliminary reports received by the Public Roads Administration of the Federal Works Agency from State authorities.

On the basis of current totals, an estimated 40,557,000 privately-owned automobiles and commercial vehicles, including buses, will be registered during the year, an increase of approximately 3,200,000 or 8.6 per cent above the 37,360,463 private and commercial vehicles registered last year.

Registration of public vehicles owned by Federal, State, county and municipal governments, estimated at 500,000, will bring the total registration for the year to more than 41,000,000.

Steadily increasing usage of the Nation's highways for commercial transportation is reflected in the fact that the total registration of trucks and buses this year is expected to reach 7,332,000, an increase of approximately 691,000, or 10.4 per cent, over last year's total of 6,641,611 registrations.

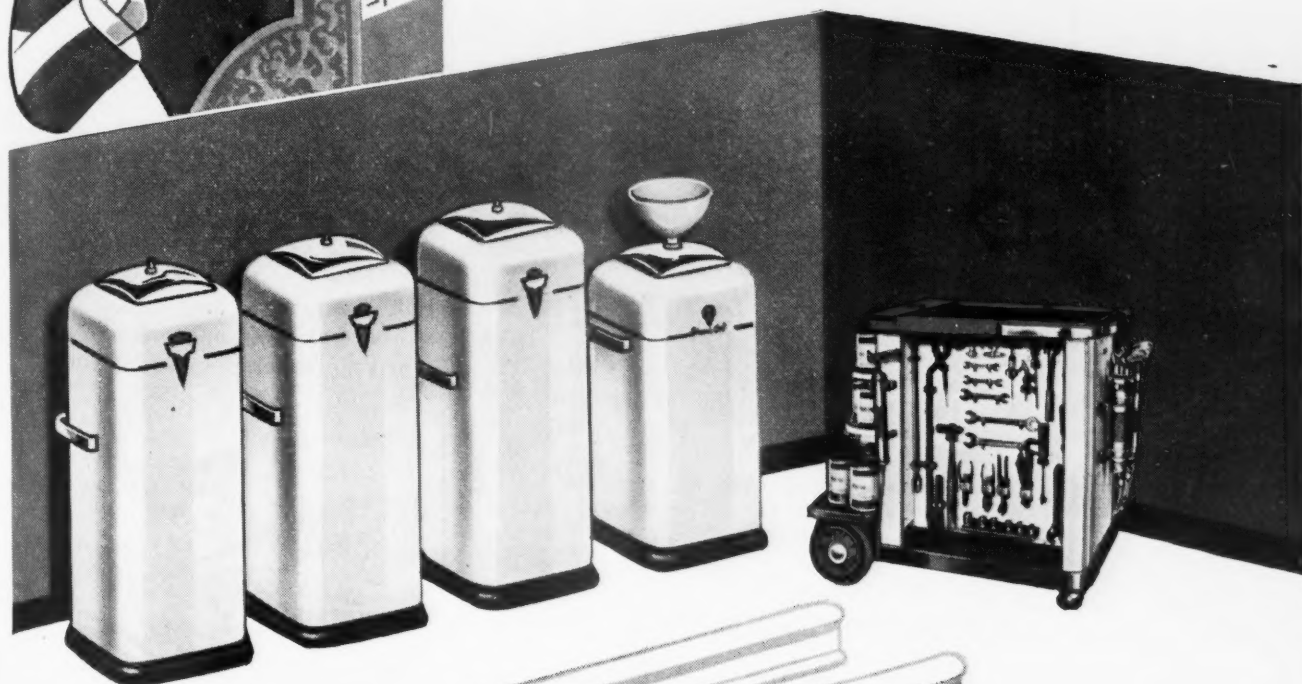
Total registration of privately-owned automobiles this year is estimated at 33,225,000 as compared with a total of 30,718,852 registrations in 1947, an increase of 8.2 per cent.



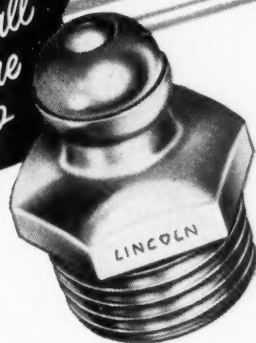
LINCOLN

Business Building

LUBRICATING EQUIPMENT



The Modern Fitting with the Ball in the Top



Lincoln is the originator of the Kleenseal Surface Check Grease Fitting—the modern fitting with the ball in the top.

THESE 100-LB SQUARE SLEEVE UNITS ROLL RIGHT UP AND DO A FAST, CLEAN, THOROUGH JOB...

Cash registers sing wherever Lincoln Lubricating Equipment is on the job. The functional beauty of the Lincoln design gives car-owners confidence—the speed and high quality of work brings profitable repeat business.

In Lincoln Square Sleeve Cabinet Units, no detail has been overlooked—hoses at back of units are out of sight yet readily accessible . . . all protruding parts, ordinarily subject to damage, are recessed or protected . . . little time is required to keep them sparkling clean . . . 100-lb. refinery drums are quickly and easily changed.

The Lincoln Servmobile, also in the above installation, is a modern work-organizing unit with service tools, specialized guns and accessories compactly arranged. It can be easily moved to any location, available when and where you need it.



Trade Mark Lincoln and trade name Kleenseal Reg. U. S. Pat. Off.

Ask for Bulletin 509

Lincoln Square Sleeve Cabinet Units are fully described in Bulletin 509. Ask your Lincoln Wholesaler or write us.

LINCOLN

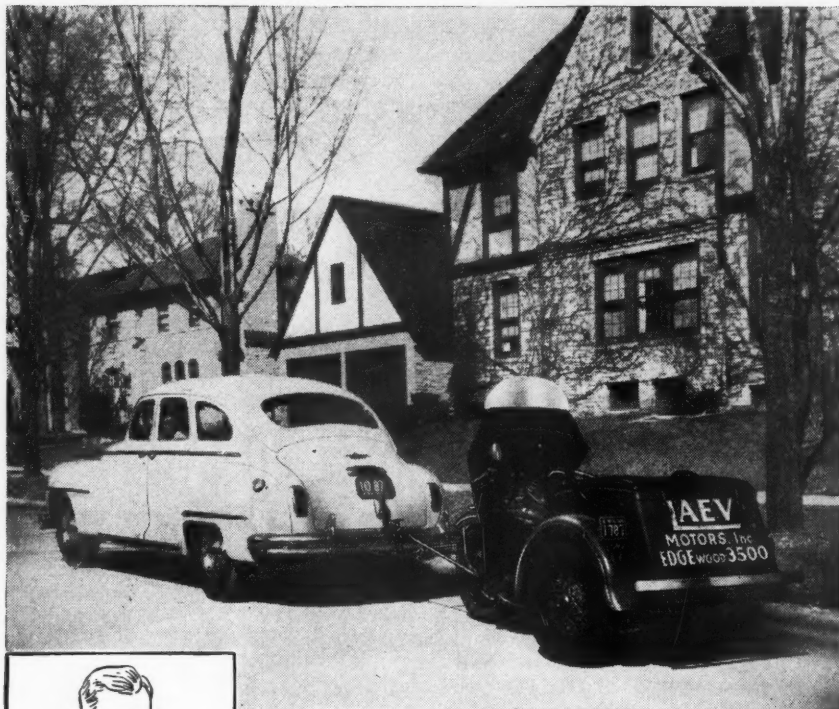
LINCOLN ENGINEERING COMPANY

Leaders in Lubricating Equipment for a Quarter Century
5701 NATURAL BRIDGE AVE., ST. LOUIS 20, MO.

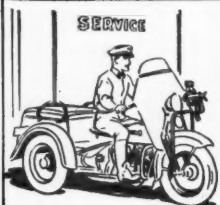
See LINCOLN — Booths D-208 to D-216 A. S. I. Show

Keep your mechanics profitably busy
with

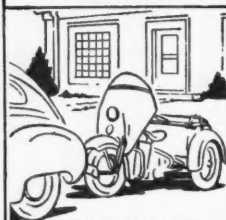
SERVI-CARS



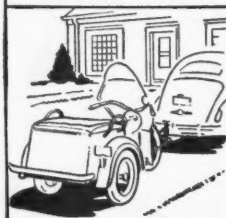
CUSTOMER PHONES
FOR SERVICE



QUICK CALL-FOR



QUICK PICK-UP



PROMPT RETURN

Make every minute pay . . . eliminate slack working periods . . . bring in cars and trucks as they are needed . . . move them off the floor as fast as repairs are completed . . . keep your high-priced mechanics profitably busy by using Servi-Car pickup and delivery service! Save time, too, in parts and accessory pickup and other errands . . . please your old customers . . . get and hold new customers . . . with Harley-Davidson Servi-Cars! An investment in good service today, an assurance of better business tomorrow. A Servi-Car pays for itself many times over in customer goodwill, in shop efficiency, in advertising and the edge it gives you on competition. Phone your Harley-Davidson dealer for demonstration. Write for folder that points the way to new profits in selling your service.

HARLEY-DAVIDSON MOTOR CO.
DEPARTMENT MA • MILWAUKEE 1, WISCONSIN

Replacing Bent Safety Windshields

Continued from page 57

this are usually destroyed in removal. (Fig. 5.) Reverse the tool as shown in Fig. 6 so that the pointed end of the barrel is at the bottom and the screw threaded pilot is threaded into the end of the shaft.

Hold the handle of the tool and with an end wrench turn the barrel counter clockwise until the burr has been pushed into its proper position. (Fig. 7.) Then reinstall the wiper arm and blade, and the job is complete. It is not necessary to use any sealing compound or oil in the rubber glass channel.

If the first piece of glass does not fit accurately, check a few others from stock, as one piece of glass may fit better than another.



"Now aren't you glad you took the afternoon off?"

A creeper which can be
used is worth a dozen
laid up for repairs, al-
ways insist on

Smash-Proof

See our Ad on page 161
HULBERT MFG. CO.

ALLEN

1949 MODEL HEAVY DUTY SYNCHROGRAPH



ALLEN

2 NEW ALLEN ACES!

1949 MODEL DELUXE FAST CHARGER

\$149.50
Slightly Higher
in the West



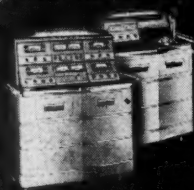
ALLEN

AGAIN... ALLEN IS FIRST WITH THE FINEST!

MODEL E-316HD SYNCHROGRAPH

Major engineering improvements allow you to test any distributor with greater accuracy than ever possible before with any equipment made. New features include: Constant Torque Drive; Motor Driven Vacuum Pump; Large Aircraft-Type Vacuum Gauge, Calibrated in Tenths; Two Meter Cam-Tach Unit; New Scroll Indexed by Vehicles; Point Resistance Test; New Universal Ford Fixtures.

See the new Model E-316HD Synchrograph at your Allen Jobber's, or write us for full details.



THE PERFECT TUNE-UP PAIR
—ALLEN SYNCHROGRAPH and
ALLEN MOTOR ANALYZER

MODEL F-200 FAST CHARGER

No other fast charger made can compete with this new 1949 Allen model in *quality* or in *price*. Every step known to modern electrical engineering has been taken to make the F-200 the finest Fast Charger ever designed... all materials and instruments have been thoroughly field tested for stamina and dependability. Only Allen could give you all that this charger has to offer for the low price of \$149.50 because no other manufacturer has the huge, self-contained production and engineering facilities of Allen.

Your Allen jobber is featuring the F-200 now — see it there or write us for full details.

ALLEN

ELECTRIC and EQUIPMENT COMPANY
KALAMAZOO, MICHIGAN

ALLEN ELECTRIC AND EQUIPMENT CO.
2337 N. Pitcher St., Kalamazoo, Mich.

Please send me complete information on
the following: Model F-200 Fast Charger ☐
Model E-316HD Synchrograph ☐

Name _____

Address _____

City _____

State _____

Nelson B. Wentzel Honored By Direct Mail Association

Nelson B. Wentzel, Deputy Third Assistant Postmaster General, was presented with a bronze plaque at the 31st Annual Conference of the Direct Mail Advertising Association.

The plaque was in recognition of Wentzel's forty-two years' association with the Post Office. It reads "Direct Mail Advertising Association, Inc., presented to Nelson B. Wentzel, Deputy Third Assistant Postmaster General on the forty-second anniversary with the United States Post Office as a tribute of appreciation for his long service in the best interests of American business and direct mail advertising."

Wentzel has been with Post Office the bigger part of his business life, starting as a clerk in the Division of Classification in Washington in 1906. He had previously put in four years with the Navy Depart-



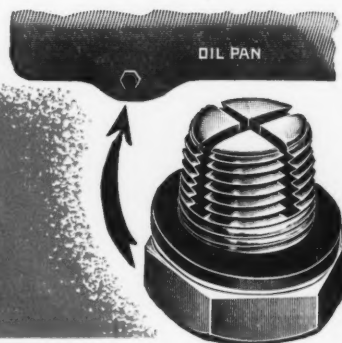
Nelson B. Wentzel (right) receives plaque from Edward N. Mayer, Jr.

ment in Philadelphia, Penna.

The presentation was made by Edward N. Mayer, Jr., President,

James H. Gray, Inc., New York, and a former president of the Direct Mail Advertising Assn.

THE ANSWER FOR STRIPPED CRANKCASE DRAIN PLUGS!



Patent No.
2,257,441



Champ-Items No. 949 Self-Threading Oversize Drain Plugs, for all cars, trucks, and tractors using $\frac{1}{2}$ " to $\frac{7}{8}$ " drain plugs, have proved life-savers when drain plugs are stripped or lost. Two handy assortments with popular sizes for practically every need: the No. 949SS Service Station Assortment contains 7 plugs, No. 949DA Dealer Assortment with 28 plugs, each plug furnished with gasket.

ORDER
FROM



YOUR
JOBBER

CHAMP-ITEMS, INC. 6191 Maple Ave., St. Louis 14, Mo.

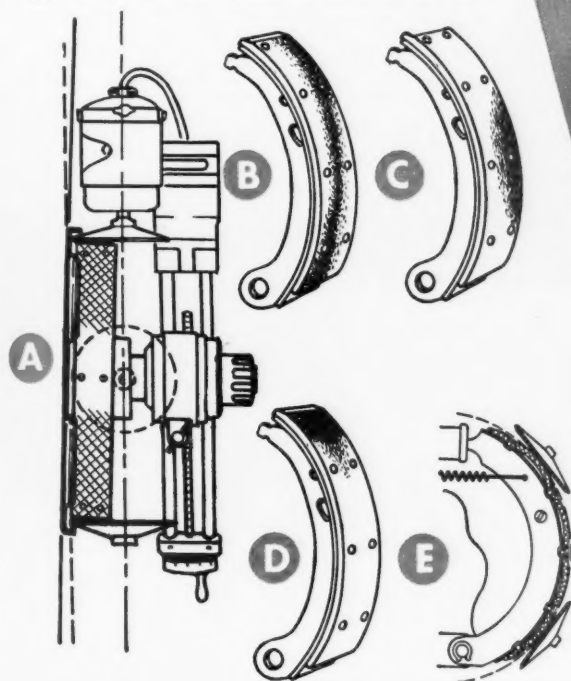


Barrett Says:

DON'T GUESS!

**LET THE
BRAKE DOKTER
SHOW YOU:**

- A** Misalignment of backing plate
- B** Twist in shoe or backing plate
- C** Bent shoe or backing plate
- D** Improper centralization and adjustment
- E** High or low spots on face of lining



THE BRAKE DOKTER CORRECTS THESE DEFICIENCIES BY CIRCLE GRINDING THE LINING AFTER THE SHOES ARE MOUNTED ON THE BACKING PLATE.

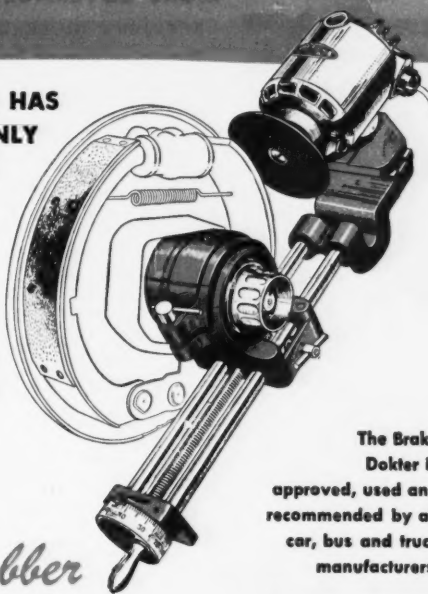
*Perfect Balance On
A Brake Job Is Not
An Accident!*

**THE BARRETT BRAKE DOKTER
ANALYZES AND CORRECTS
THE MOST STUBBORN
BRAKE PROBLEM**

- Grinds lining to perfect drum arc after shoes are mounted on backing plate
- Compensates for twisted or bent backing plate
- Corrects for bent or twisted brake shoes
- Removes only the high spots from the lining
- Produces 100% lining-to-drum contact
- Assures perfect centralization and adjustment of shoes
- Insures longer lining life
- Eliminates need for wear-in period
- Prevents spongy brakes and hard pedal
- Does away with dummy drums, gauges and gadgets
- Handles all brake shoe assemblies 9" to 24" diameter
- Requires only one mechanic to operate — no special training needed

**THE BRAKE DOKTER HAS
BEEN PROVED THE ONLY
METHOD TO INSURE
PERFECT BRAKES**

The Brake Dokter turns troublesome reline jobs into profit jobs. Establish a charge on this service and watch your profits soar!



The Brake Dokter is approved, used and recommended by all car, bus and truck manufacturers.

*Ask Your Jobber
to Demonstrate*

BARRETT EQUIPMENT CO.

The World's Finest Brake Service Equipment
TWENTY-FIRST AND CASS • ST. LOUIS 6, MO.



YOU and ASI Continued from page 37

the A.S.I. and its predecessor shows, one man has stood out as a guiding light and expert manager. This man who can be called "Mr. Show" himself is A. B. Coffman who has managed every show since the first one back in 1919.

A 5-day show is scheduled for this year, instead of 6 days as in the past. On the first three days,

December 6, 7, 8, the show will be open to members of the sponsoring associations only. Invited guests may attend the last two days, December 9-10, only. The A.S.I. Show is exclusively a wholesaler's affair and only those manufacturers and wholesalers participating in a manufacturer-through wholesaler-through retailer type operation are

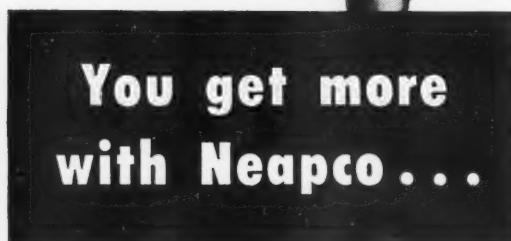
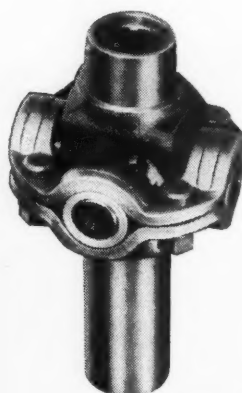
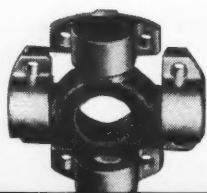
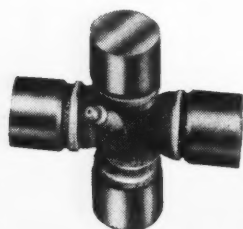
permitted to exhibit or to attend.

The Joint Operating Committee, which is responsible for the planning and conduct of the show, is composed of four members from each of the sponsoring associations. Chairman of the 1948 committee is W. F. Wilkerson, Wyoming Automotive Co., Casper, Wyoming. Vice-chairman is B. G. Close, King Quality Products Co., St. Louis, Missouri. Committee members are:

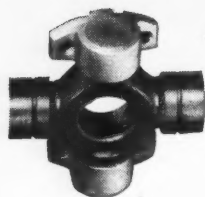
Motor & Equipment Wholesalers Association—W. F. Wilkerson; Hal Miller, Chicago Auto Parts Co., Chicago, Ill.; W. T. Mills, Auto Parts Co., St. Louis, Mo.; F. G. Stewart, Standard Automotive Supply Co., Washington, D. C.

Motor & Equipment Manufacturers Association—B. G. Close; C. P. Brewster, K-D Manufacturing Co., Lancaster, Pa.; J. M. Spangler, National Carbon Co., New York, N. Y.; S. B. Wilson, Fram Corporation, Providence, R. I.

National Standard Parts Association—N. F. Kaplan, Penna. Rubber & Supply Co., Cleveland, Ohio; D. H. Teetor, Perfect Circle Co., Hagerstown, Ind.; G. R. Walker, Walker Manufacturing Co., Racine, Wisconsin; A. E. Pouliot, National Bushing & Parts Co., Minneapolis, Minnesota.



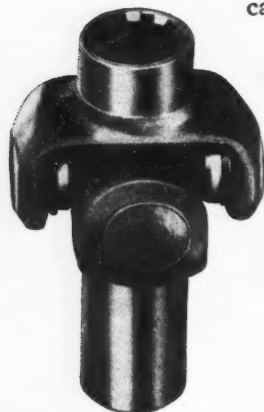
**You get more
with Neapco . . .**



MORE COVERAGE . . . Neapco services more than 90% of America's cars and trucks.



MORE DEPENDABILITY . . . Neapco has been manufacturing quality universal joints for more than 25 years. This experience, plus the most modern manufacturing facilities, assures you dependable replacements—unequivocally guaranteed.



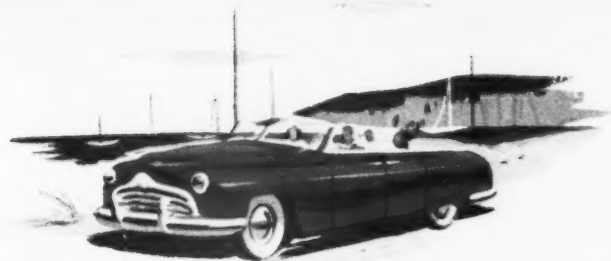
MORE SATISFACTION . . . Neapco engineered parts fit properly and are designed to last longer—save your time and make satisfied customers.

BE SURE . . . Get more with Neapco. At your Neapco Jobber's. New England Auto Products Corp., Pottstown, Pa.

**AMERICA'S MOST COMPLETE INDEPENDENT
LINE OF UNIVERSAL JOINTS & PARTS**



"He don't give a hoot for nothin'."



tops in seat cover performance

Suskana...SARAN

All the qualities your customers admire in custom-fitted seat covers are now available at prices that mean volume sales! Suskana Saran, featured in pre-tailored seat covers, provides the same brilliant beauty, the same wear resist-

ance and smooth riding comfort formerly known only at much higher prices. When you order from your distributor, be sure to specify seat covers of Suskana Saran—your assurance of seat covers that sell on sight!

Unmatched for Style . . . Sales . . . Profits!



Susquehanna Mills inc.



SUSKANA fabrics for Auto Seat Covers,
Upholstery, Men's wear,
Women's wear, Neckties.

404 Fourth Avenue, New York 16, N. Y.

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er, 1948

CHRISTMAS TIME IS EXTRA-PROFIT TIME...

with Delco!

**DESIGNED ESPECIALLY FOR AND SOLD
THROUGH THE AUTOMOTIVE TRADE**

RADIOS

COMBINATIONS

TELEVISION

This is the selling season and the Delco line of radio and television receivers is easy to sell! In this line you have everything—portables, table models and consoles—radios, radio-phonograph combinations and television receivers. And you have the backing of three big names—Delco, General Motors and United Motors! This all adds up to **EXTRA PROFITS FOR YOU** if you build up your holiday season inventories **NOW!** See your United Motors distributor, or write to United Motors Service, General Motors Building, Detroit 2, Michigan, attention Mr. H. C. Smith.



New DELCO MODEL R-1250 Console radio-phonograph combination; ultra-modern cabinet in natural Korina wood, with brushed brass hardware. Nine tubes plus rectifier tube; three-gang tuning on AM and FM bands; 4-position tone control; built-in loop and dipole antennae; 12" electro-magnet dynamic speaker, automatic volume control; 105-125V. AC 60-cycle operation. Pull-out drawer record changer handles 10 12-inch or 14 10-inch records; automatic shut-off. Cabinet size 33" high, 33½" wide, 17½" deep. *Truly a Knockout!*



New DELCO MODEL R-1241 table model radio-phonograph combination in dark walnut finish with contrasting wool-and-rayon grille. Radio chassis has 4 tubes plus rectifier tube; standard broadcast band 550-1600 KC; built-in loop antenna; 105-125V. 60-cycle AC operation. Record player will take 10 12-inch or 12 10-inch records; crystal cartridge with osmium-tipped needle. Cabinet size 10½" high, 16" wide, 19" deep. *A Fast Mover!*

New DELCO MODEL TV-101 television receiver, ideal for the average home. The 10-inch tube provides a 55 square-inch picture. Noise-free FM sound system. Controls for 12-channel reception, contrast, brightness, volume, horizontals and verticals on front panel. Twenty-one tubes plus two rectifier tubes; AC 60-cycle 105-120V. operation. Walnut cabinet 18" high, 14¾" wide, 19½" deep. *You Will Find Plenty of Interest In This One!*



UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION • GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

DELCO Batteries
AC Fuel Pumps, Gauges
and Speedometers
INLITE Brake Lining
SAGINAW Jacks

DELCO Radio Parts
HYATT Roller Bearings
DELCO Auto Radios
DUREX Gasoline Filters
HARRISON Heaters
DELCO Home Radios

DELCO Shock Absorbers
NEW DEPARTURE
Ball Bearings
GUIDE Lamps
HARRISON Thermostats

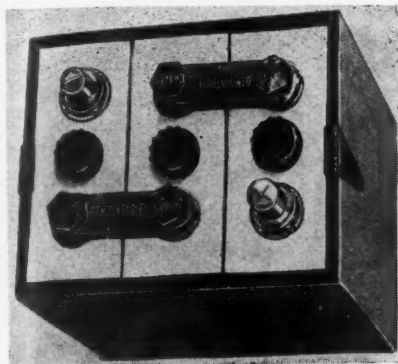
DELCO-REMY Starting,
Lighting and Ignition
KLAXON Horns
HARRISON Radiators
DELCO Hydraulic Brakes

New Products Continued from page 62

For Further Information Use Coupon on Page 62

110—Demountable Battery

Associated Battery Assemblers, Los Angeles, Calif., are marketing the Nu-Form Demountable Automobile Battery, which features a light, air conditioned outside container, designed to keep all the elements in the battery at the same even temperature.



This new air cooled case is said not only to provide full air circulation for each cell, as well as full acid circulation, but by lessening the weight of the battery, make handling easier. The individual cell jars are so designed that the cover has eight supports to suspend the elements. According to the manufacturer, this prevents injury from shock and vibration which normally results when the elements rest on the bottom of the battery.

111—Modified Prestone

National Carbon Company, Inc., New York City, N. Y., has announced a new "Prestone" anti-freeze this year. The base of the product is still concentrated ethylene glycol, but it contains new heavy-duty corrosion and foam inhibitors.

The specific gravity is changed, and anti-freeze testers designed for "Prestone" anti-freeze produced before 1948 will not correctly read the freezing protection of the new product.

To provide dealers with testers that are suitable for reading the new "Prestone" anti-freeze, National Carbon Company is market-

ing the new "Eveready" Tester No. 59 through its "Prestone" anti-freeze agents.

112—Casco Replacement

Casco Products Corporation, Bridgeport, Conn., has announced

a replacement three rubber-blade defroster fan assembly, which offers a ready replacement for rubber-bladed defroster fans. Casco, in announcing this replacement item, has again developed a merchandising display to promote the sale of this replacement blade, window streamer, newspaper mats and electros.

The replacement fan hub assembly fits all 6 in. rubber-bladed fans.

(Continued on page 144)



BE SAFE . . . BE SURE . . . USE SOL-SPEEDI-DRI

People who use SOL-SPEEDI-DRI—industry's original and foremost absorbent for all liquids—have learned that they can count on the uniformly high quality of SOL-SPEEDI-DRI. They have learned, too, that SOL-SPEEDI-DRI costs less by the pound because it does more work . . . because it is always efficient, always dependable.

Yes, it's quality all the way with

SOL-SPEEDI-DRI . . . quality that assures you cleaner, brighter, safer floors . . . freedom from slips and falls caused by dangerous, slippery surfaces. Obtained by selective mining, laboratory-checked hourly, and processed by the most modern methods and equipment, SOL-SPEEDI-DRI comes to you in special weather-proof bags, every pound at peak efficiency.

WHEN YOU BUY, BE SURE IT'S SOL-SPEEDI-DRI!

Safety and Maintenance Co., Inc.
No. 1 Wall Street
New York 5, N. Y.

Warehouse Stocks Maintained in Principal Cities of the United States and Canada.



New Products Continued from page 143

For Further Information Use Coupon on Page 62

113—Draco Arm Rest

The Dray Company, South Orange, N. J., is marketing the Draco E-Z Arm Rest, a detachable accessory which sits on the seat on the right of the driver, as a right arm rest. The Draco E-Z Arm Rest,

which is adaptable for use in any car or truck, has a nickel plated frame and polished wood rest.

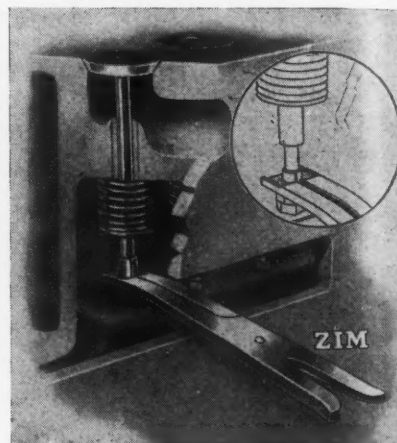
114—Eis Super 50 Fluid

The Eis Manufacturing Co., Middletown, Conn., announces a

new brake fluid called "Eis Super 50," for use in trucks, buses and cars under extreme weather and operating conditions. It has a boiling point over 300° F and will flow at 60° F below zero, according to statements made by the manufacturers, and it preserves and protects rubber parts, is absolutely non-corrosive and won't evaporate.

115—Zim Key Inserter

The Zim Mfg. Co., Chicago, Ill., announce the Magnetic Key Inserter, designed for replacing split valve keys. "Permanent Magnets" are employed in the jaw tips of the spring controlled levers . . . however, the rest of the handle is made of a non-magnetic metal.



These magnets in the jaw tips hold the keys firmly, permitting both hands to remain free, since the grip of the jaws will support the tool itself.

116—Highflex Air Hose

B. F. Goodrich Company, Akron, Ohio, is producing a new Highflex air hose for small tools which is claimed to weigh less than half as much and is stronger than the ordinary hose used in this service. The hose is as flexible as a lamp cord because of its light weight and other construction features, the company says. The hose weighs 8.8 pounds per hundred feet in the 1/4 inch size, whereas the same length of ordinary hose in that size would weigh 20 pounds. It is said that this hose is oil proof inside and out and will not swell to cut air pressure or volume or flake off. This new hose is designed to handle pressures as high as 250 pounds.

(Continued on page 145)

NOW A WRITTEN GUARANTEE WITH EVERY AMKO WATER PUMP






EQUIPMENT TYPE SEAL

NEW DESIGN CONSTRUCTION ENGINEERING

AMKO Pumps are Tops in Quality. New Design with New, Improved construction methods and Precision Engineering enable us to give this written Guarantee with every pump. AMKO Pumps are made in our own plant, under our exacting supervision from the highest quality materials and we take a justifiable pride in giving our written Guarantee . . . It protects you and protects your customers. Every AMKO Pump duplicates original equipment and their installation is an easy and simple job. An outstanding improvement in their manufacture is the use in every AMKO Water Pump of the NEW BELLOWS SEAL WITH CARBON WASHER. Available Now for immediate delivery.

DO YOU HAVE OUR NEW CATALOG NO. 106?
HAVE YOU SEEN OUR COMPLETE LINE OF UNIVERSAL JOINTS?
ALL PRODUCTS SOLD THRU JOBBERS ONLY
Meet us at Booth D-362
at Navy Pier in Chicago



THICK CARBON WASHER



AUTOMOTIVE MAN'G. CO., INC.
 General Offices and Warehouse
 570 W. FULTON ST. CHICAGO 6, ILL.



New Products Continued from page 144

For Further Information Use Coupon on Page 62

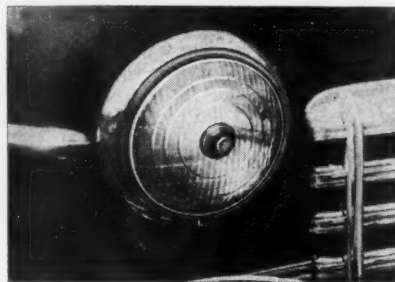
117—Ramsey Parts Cleaner

The Ramsey Corporation of St. Louis, Mo., announces the addition of the Ramco 3-Up Parts Cleaner to their line. The new cleaner is described as a fast-acting cold parts cleaner that will remove carbon, gums and baked on oil deposits from metal parts.

It is stated that Ramco 3-Up Parts Cleaner will not harm hands or metal and is non-inflammable.

118—Gits Fog Fighters

The Gits Molding Corporation, Chicago, Ill., is marketing "Fog Fighters," a pair of amber colored unbreakable plastic headlight covers, to each of which is attached a small rubber suction cup.



The new device is pressed on to each of the headlights when dangerous driving conditions are encountered. Since it cuts down the amount of light available, the product must be removed when the fog area has been passed.

119—Cleaning Solvent

The Curran Corporation, of Lawrence, Mass., has announced their liquid aromatic concentrate, which is adapted for use in recirculating solvent cleaning machines for degreasing automotive parts, since the concentrate may be added to ordinary mineral spirits Commercial Standard CS-3-38. The addition of five gallons of the new aromatic concentrate to a fifty-gallon drum of the mineral spirits results in increasing the solvency of the mineral spirits to such an extent, the manufacturer states,

that they become an effective solvent with a quick evaporation rate.

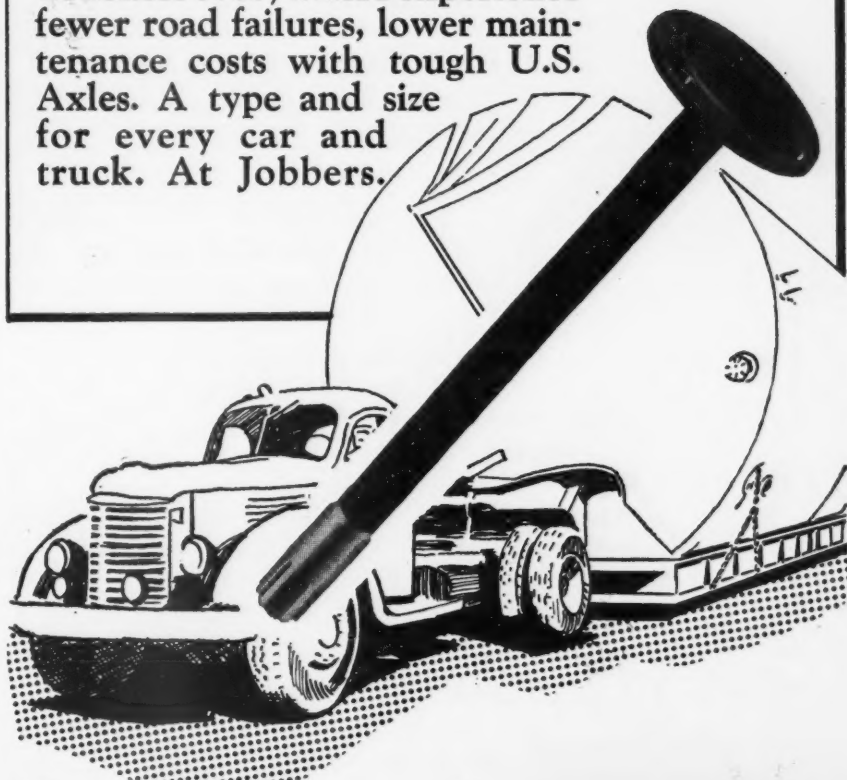
120—T.D.C. Indicator

The Thexton Mfg. Co., Minneapolis, Minn., is now marketing timing plates and a top-dead-center

ter indicator for all Ford V-8 cars. The pair of timing plates consists of a pointer plate, which is slotted to slide under two of the timing gear cover bolts, and a timing plate which fits on the pulley hub. The T.D.C. indicator screws into the spark plug hole, and operates by an electrical contact between the top of the piston and the point of the indicator. The indicator lights when the piston is at top dead center.

Tough U.S. Axles for tough hauls

Truckers everywhere experience fewer road failures, lower maintenance costs with tough U.S. Axles. A type and size for every car and truck. At Jobbers.



Free Latest catalog. Contains listings

U.S. replacements for all types cars, trucks, also army surplus trucks. Write

The U.S. Axle Co., Inc., Pottstown, Pa.

US AXLES

New Products Continued from page 145

For Further Information Use Coupon on Page 62

121—Polishing Compound

The DuPont Company, Wilmington, Del., are now marketing two new products for use with automobile rubbing and polishing machines. They are VZ-1196 "Duco" Machine Polishing Compound No. 14 and VZ-1202 Liquid Machine

Polish. The No. 14 compound cuts faster, is less greasy and is easier to clean up than similar DuPont products, states the manufacturer, and it is scientifically prepared to impart a high lustre to "Duco" and other lacquer surfaces. The liquid machine polish was developed to

supply a satisfactory polish for use with standard polishing discs or lambs wool bonnets. It is claimed to clean and polish quickly, and to not mat the buffer.

122—Sales Dispenser

The A. P. Parts Corporation, Toledo, Ohio, have made available a colorful two-way sales dispenser.

Built of heavy wire, this dis-



pensor holds seven 8-oz. Miracle Power bottles on each of the six partially projecting shelves (three shelves on each side.) The unit is painted emerald green, blue and white.

123—Piston Setter

The Acme Tool Company, New York City, N. Y., is now marketing a tool designed for removing and replacing pistons in automotive engines.

This tool operates by removing the bottom bearing cap from the connecting rod, leaving bolts in place, gripping the jaws of piston setter to one of the bolts (less nuts), and pushing setter and piston upward, straight through the cylinder bore. A turn of the handle releases grip on bolt. To replace pistons, fasten setter to connecting rod bolts, pull into position directly over the crank shaft bearing.

By using this tool one man can remove or install pistons.

(Continued on page 148)

Cash in on Bonded-Brake Service the BELT-BACKSTAND WAY

A "single pass" on a backstand belt is all it takes to grind the new brake shoes level, chatter-free and "toothy" for perfect band-to-shoe bonding. And in removing old bonded-type bands for relining, the worn "stuck-on" linings are whisked off quickly and easily with the same operation. But more, this same all-shop tool shortcuts scores of jobs because it grinds, polishes, sharpens, and finishes, quickly, economically — right.

The two big reasons are: 1) The abrasive belt is sharper and faster. 2) The resilient contact wheel delivers a soft wide-area grind. You "feel" the new cutting action the minute you try the belt-backstand method. And it's a simple, inexpensive conversion for your present bench grinder. Write us for a free demonstration in your own shop.



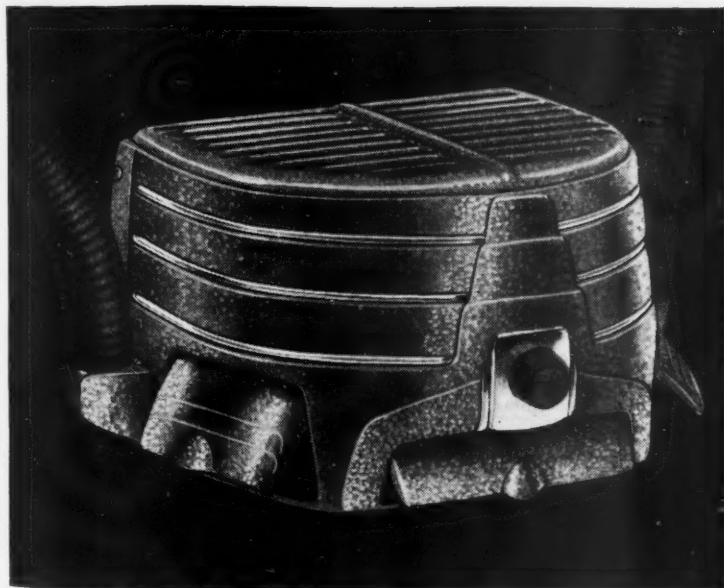
BEHR-MANNING
(DIVISION OF NORTON CO.)
TROY, N. Y.



NOW! Come up with the BIG PUNCH!



For a smashing season's total of
ARVIN CAR HEATER SALES



- Lowest first cost.
- Lowest operating cost.
- Uniform Heat Distribution.
- Heats fast, with free hot water from the engine.
- Adjustable deflectors send heat wherever wanted.
- Defrosts windshield without extra fan or motor.
- Easy to install — Easy to transfer.

Keep your ARVIN Display Material Working!



See the great NEW profit opportunities at the
ARVIN EXHIBIT
Booths B341-343-345-347
AUTOMOTIVE SERVICE INDUSTRIES SHOW
Navy Pier, Chicago, December 6th to 10th

NOBLITT-SPARKS INDUSTRIES, Inc.
Columbus, Indiana

New Products Continued from page 146

For Further Information Use Coupon on Page 62

124—Appleton Spotlight

Appleton Electric Co., Chicago, Ill., has announced their new sealed beam spotlight, Model S-450.

Model S-450 features include a refined switch and a compact head housing. It turns in any direction, covering a full 360° horizontal

sweep. Average installation time is only 20 minutes, according to the manufacturer.

125—Radiator Cleaner

The Service Supply Company of Denver, Col., has just announced the development of a new cooling



CLEAN UP

with

A Complete Line of



Automotive Cleaners

Made by a company with 36 years of know-how in the manufacture of cleaners and soaps, including the famous *HARCO* Green Bar Soap. The line includes:

CARBOSOLVE—A triple-action carburetor cleaner and carbon remover. Cuts cleaning time in half. Does not pit, corrode or damage metals. Meets U. S. Government specifications.

GREAS-OFF—The all-purpose degreasing solvent. Highly concentrated and emulsified. *Brush it on—Hose it off.* For cleaning engine blocks, motor parts, used car chassis, radiators, etc.

CAR WASH—A revolutionary, non-alkaline formula in powder form. Saves time because it is streakless and requires no wiping.

DRIVEWAY CLEANER—Quick-acting powder compounded for fast, easy cleaning of concrete, asphalt and wood floors, driveways and lube pits.

**Contact your automotive supplier today
or write us direct for further details.**

HARLEY SOAP COMPANY

Philadelphia 37, Pa.

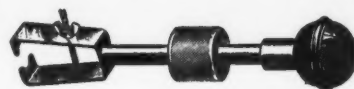
KEEP THE BUSINESS CLEAN

system cleaner, to be manufactured and sold under the name RE-MO. RE-MO will be packaged in a double-section, fibre, can-type container. One section will contain 14½ ounces of an acid-base compound designed to cut grease, scale, alkali and rust deposits, and the other section will be used as a neutralizer to restore cooling systems to a desired non-acid condition.

126—Door Handle Puller

The Douglass Distributing Co., St. Louis, Mo., is marketing a multi-purpose tool, the Car Handle Puller-Flange Depressor.

It is said that it will pull stuck inside door and window handles and outside door locks, and will depress the escutcheon plate for replacing pins.



It is also claimed that where plastic escutcheon plates have become tight on the shaft, the jaws may be adjusted behind the handle, as when used as a puller, and the outer end of tool rocked back and forth, forcing the flange back without danger of cracking.

127—Grizzly Brake Parts

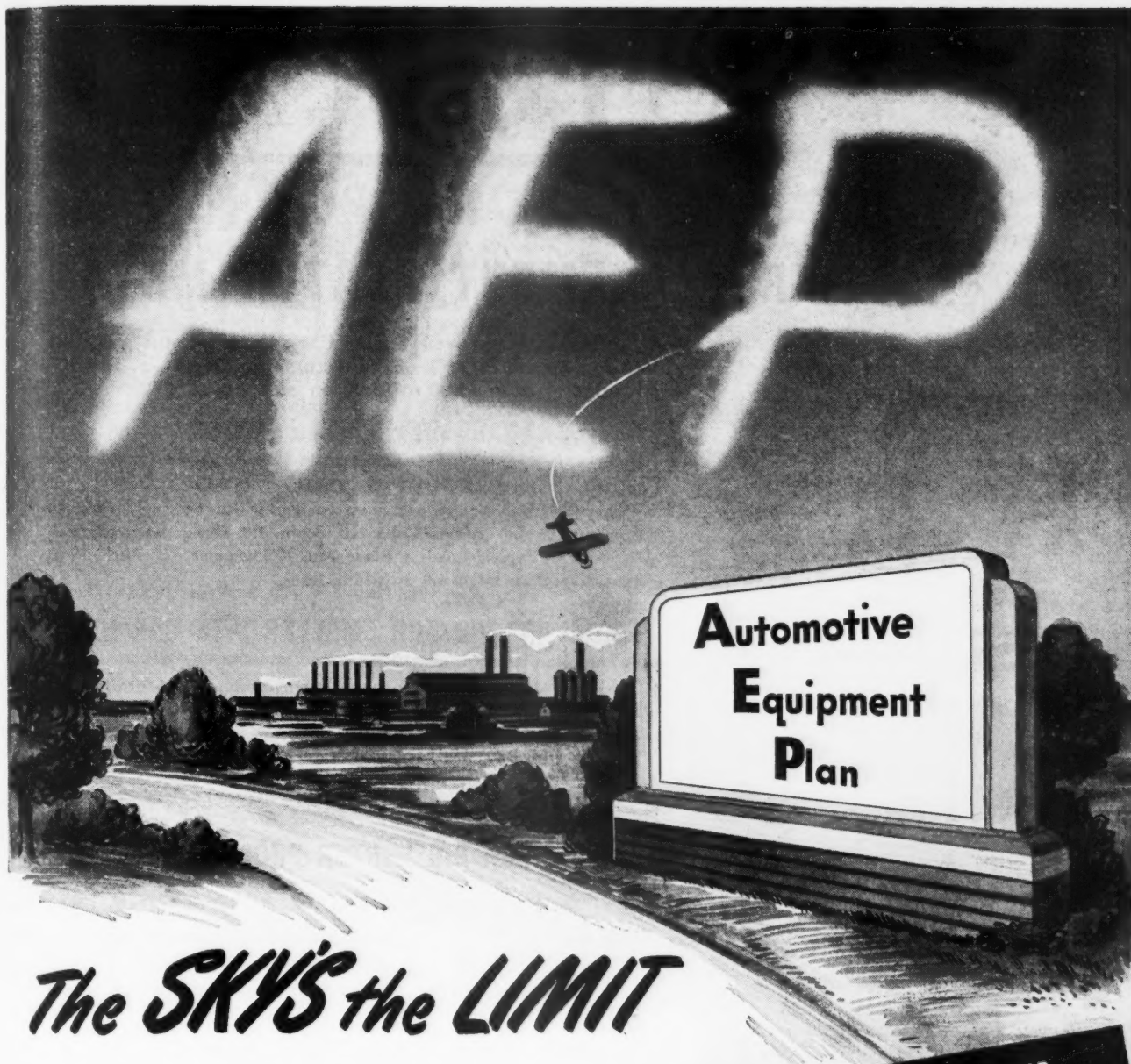
Grizzly Manufacturing Company, Paulding, Ohio, now announces that it has added a complete line of Hydraulic Brake Parts.

The line includes wheel and master cylinder repair kits, hydraulic brake hose and stop-lite switches and their component parts such as boots, cups, pistons, valves, seats and other necessary hydraulic repair parts.

128—Special Tire Tool

The Ken-Tool manufacturing Company, of Akron, Ohio, is now offering the T-25 tire tool. This product is designed for use in the servicing of the new five-degree rims.

(Continued on page 151)



The SKY'S the LIMIT

What do you need to make your shop the best equipped in your neighborhood . . . or your community?

If it's just one new item, you are perfectly welcome to finance it on the Automotive Equipment Plan.

And if it's eight . . . ten . . . or twelve items, with the total cost running up into thousands . . . AEP is still your best bet. You pay a minimum in cash as a down payment, and let the equipment earn its keep as you pay for it . . . month by month.

Talk to your jobber today about what you need . . . and how to finance it the AEP way.

THE BEST EQUIPPED SHOP
GETS THE PROFITABLE BUSINESS

BUY . . . AND FINANCE . . .
THROUGH YOUR JOBBER

ONE CONTRACT . . . ONE COST
. . . INSURANCE INCLUDED



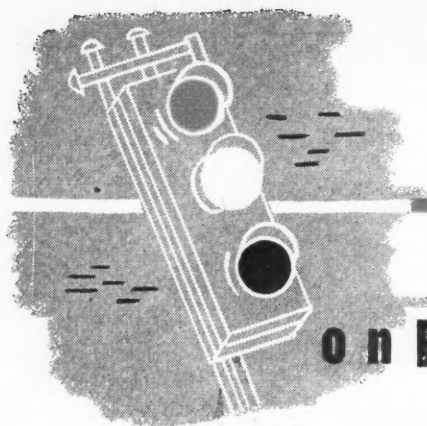
If you don't know about A E P . . . ask your jobber.

COMMERCIAL CREDIT CORPORATION

A Subsidiary of Commercial Credit Company, Baltimore

MORE THAN 300 OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

MOTOR AGE, November, 1948



SIGNAL

For *MORE* PROFIT on REPLACEMENT HEATER MOTORS!

With these two improved Signal Car Heater Motors, you can replace approximately 90% of the motors in the field . . . an additional profit of from \$1.00 to \$5.00 on each job.

NO. 600 STANDARD REVERSIBLE MOTOR

FOR LARGER SIZE AUTO HEATERS

Powerful lamination-type motor. Sealed-for-life bearings. Oversize commutator and brushes. Volts: 6.0. Amps: 7.0. Speed: Approximately 2600 RPM. Typical Load: 5 Blade Fan, 7" Diameter, $\frac{7}{8}$ " Pitch. Rotation: Reversible by merely switching leads.

NO. 550 STANDARD FOR SMALLER SIZE CAR HEATERS

Maximum air flow with minimum current drain. Sealed-for-life bearings. Lamination-type motor. Long-life Brushes. Volts: 6.0. Amps: 2.8-3.0. Speed: 2700 — 2900 RPM. Typical Load: 4 Blade Fan, 6" Dia. $\frac{3}{4}$ " Pitch. Standard rotation: C. C. W. Shaft End.

2 BIG ITEMS

FOR BIG WINTER PROFITS!

SIGNAL RUBBER BLADE AUTO FAN

No. 3-6 Six Volt

No. 3-12 Twelve Volt

This *PROVEN* Auto Fan removes sleet, snow, frost, fog. Cools in summer. Harmless 6" rubber blade. Silent operation. Finest lamination type motor. Self-oiling, self-aligning bearings. Two speed switch. Replacement blades available.

List Price \$9.45. Your Profit \$3.78. (6 volt)

"SEE-KLEER" DEFROSTERS

No. 816 Size of glass: 8 x 16 in. 6 and 12 volt. Improved, patented, accordion shaped rubber sealing strip assures positive defrosting. 3 ft. cord. *New completely enclosed switch*. No current needed on mild days. 4 heating wires. 4 suction cups. Harmless to windshield. Gray finish.

List Price \$3.40. Your Profit \$1.36. (6 volt)

ALL MODELS INDIVIDUALLY PACKED ... 12 TO A STANDARD SHIPPING CARTON. ORDER NOW. CHECK OFF YOUR NEEDS FOR WINTER BUSINESS.

CONTACT YOUR JOBBER OR USE COUPON BELOW.

SIGNAL MANUFACTURING COMPANY, INC.
LYNN, MASSACHUSETTS

Gentlemen:

Send me 12 No. 600 Replacement motors @ \$3.99.
12 No. 550 Replacement motors @ \$3.45.
12 No. 816 "See-Kleer" Defrosters 6 volt @ \$2.04.
12 Signal Auto Fans 6 volt @ \$5.67.

☐ Send me further information about the fast-moving Signal line.
☐ Enclosed is \$..... (Send check or money order with your order. NO C. O. D.'s.)

Name

Company

Address

City Zone State

SIGNAL

MFG.
CO.
INC.

LYNN, MASSACHUSETTS

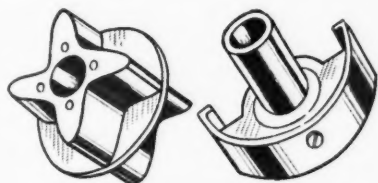
For Further Information Use Coupon on Page 62

129—Aluminum Visor

The Rankin Airfoil Visor, manufactured by the Rankin Manufacturing Co., Cedar Falls, Iowa, is made of airplane type aluminum, and streamlined so as not to vibrate or whistle. It may be installed on any car in five minutes, it is claimed, with two clamps on each side, and one center brace. There are no holes to drill, as it clamps right to the rain gutter channels. The visor can be placed at various angles by adjusting the center clamp.

130—Rotary Lock Kit

The Globe Auto Glass Co., Chicago, Ill., announce the ROTO-LOKIT Repair Kit, a replacement



part for front or rear rotary door locks. ROTO-LOKIT is a patented unit that can be installed without removing door lock or opening up door upholstery.

131—Brake Cable Guard

Champ-Items Inc., St. Louis, Mo., has introduced their No. 449 Emergency Brake Cable Guard for 1949 Ford and Mercury cars. In describing the No. 449, the manufacturer states that tension is provided to keep emergency cable away from inside of rear tires. This guard is designed to be installed around cable and rear spring at the point where cable is nearest to the spring.

132—Freezex Anti-Freeze

Speco Solvents Division of Speco, Inc., Cleveland, Ohio, announces production of Freezex, a new anti-freeze.

Freezex is a blend of super refined alcohols, according to the manufacturer and, chemical additives prevent rust and corrosion.

133—Two-Ton Floor Jack

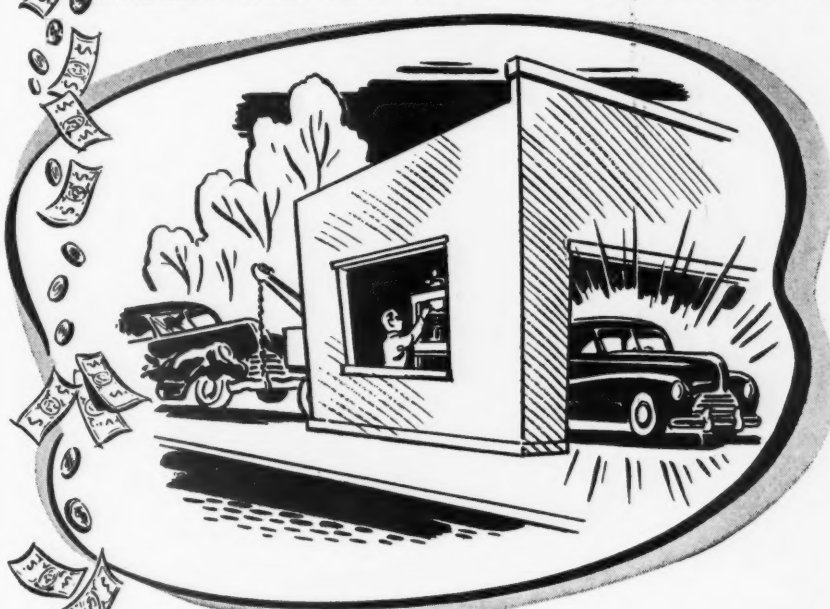
The Manley Division of American Chain & Cable Co., Inc., York,

Pa., has introduced a new two-ton hydraulic floor jack.

Features of this new jack are a wide caster bracket for greater stability and ball bearing swivel casters on rear wheels, dropped forged steel valve body, one piece box-type steel frame, and steel lifting arm. Lifts two tons with complete safety, the manufacturer states. The hydraulic cylinder is totally enclosed.

(Continued on page 152)

How to make MORE MONEY with a DAKE PRESS



Get them on the road quicker —increase your business

You can't make money on press jobs that someone else does. Bumper straightening, riveting, and many mechanical part replacements require an adequate press. You lose time and money if you're passing

up these profitable jobs. The right Dake press in your shop will speed these extra jobs and let you keep the profits. Investigate now—mail the coupon for your free copy of the Dake press catalog.



Dake Engine Company
626 Seventh St., Grand Haven, Mich.
Please mail me a copy of the latest Dake Arbor Press Catalog.

Name _____
Company _____
Address _____
City _____

New Products Continued from page 151

For Further Information Use Coupon on Page 62

134—Gabriel Metalume

The Gabriel Company of Cleveland, Ohio, have placed on the market Metalume, a metallic plastic. Gabriel Metalume is used as a filler or surface coating. It may be applied with a spatula or squeegee—or thinned out to the

consistency of paint for brushing or spraying.

Used in combination with this is "Celastic," a colloid treated fabric used to cover torn or rusted areas. When moistened with "Celastic" softener it can be hand-molded to any shape, and according to the manufacturer, it dries in the air to

a metallic hardness. It may be sanded, feather edged and covered with Gabriel Metalume to effect a permanent repair.

135—Magnus Hand Cleaner

The Magnus Chemical Co., of Garwood, N. J., now offers its powdered hand cleaner in 5-lb. containers.

136—Cristy Drygas

The Cristy Chemical Corporation, Worcester, Mass., has announced the new "Triple Action" Drygas will be presented to the public and to the trade via a new fall and winter advertising campaign.

Twenty-five percent of automotive starting failures in winter are caused by frozen fuel lines, the manufacturer claims and dry-gas in the gas tank stops this kind of stalling by dispersing the moisture in the gas system.

Drygas is said to contain a rust inhibitor, provide upper cylinder lubrication, help prevent vapor lock and make starting easier.

New Literature Announcements

C-1 Bee Line Company, Davenport, Iowa.

An eight-page circular covering all 1948 and some 1949 front end specifications.

C-2 Executone, Inc., New York City, N. Y.

A booklet called "How To Turn Out More Service Jobs—At Lower Cost!" explaining the use of electronic intercom systems in shops.

C-3 Automatic Steel Products, Inc., Canton, Ohio.

A catalogue of their complete line of all-purpose grinding wheels.

C-4 The Chek-Chart Corporation, Chicago, Ill.

The ninth edition of the Chexall Accessory manual.

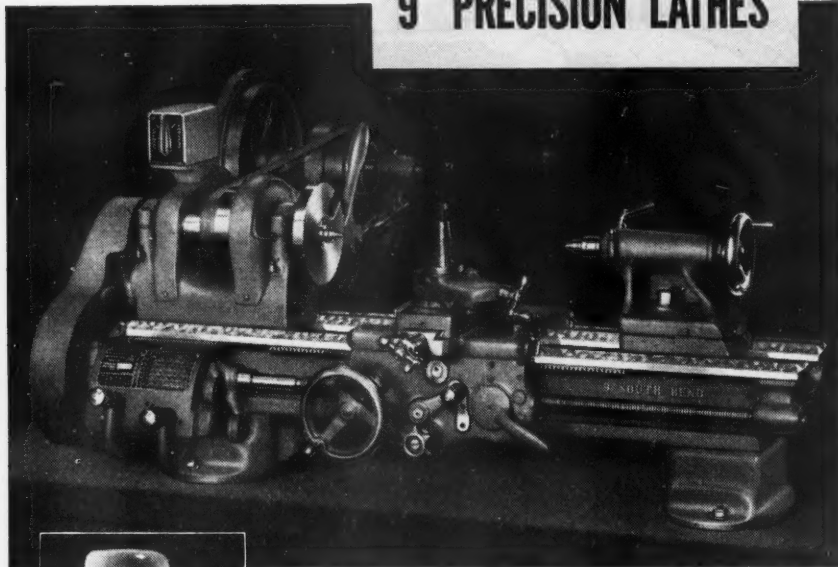
C-5 The Cleveland Chain and Manufacturing Co., Cleveland, Ohio.

A new set of catalog price sheets on car, truck, and bus chains.

(Continued on page 153)

*For Better
Service Work*

SOUTH BEND 9" PRECISION LATHES

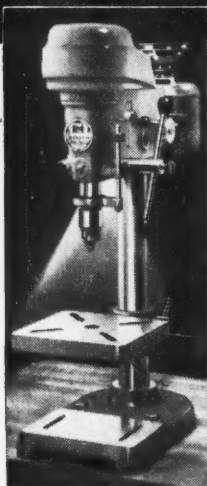


9" X 3' MODEL A BENCH LATHE **\$344.45**
Complete with 12-speed drive; 1/2 h.p., 60 cycle, 115 volt, A. C. motor; and switch f.o.b. factory

This South Bend 9" Lathe is ideal for automotive service. Its accuracy and versatility will enable you to turn out more and better work at lower cost. With this fine precision lathe you can true and undercut armature commutators; reface valves; finish pistons; machine bushings, pins, shafts, axles and scores of other parts right in your own shop. Practical attachments can be used to simplify special classes of work. Write for complete information. Immediate delivery—time payment terms.

**AUTOMOTIVE SERVICE INDUSTRIES SHOW
DECEMBER 6-10, 1948
BOOTHS B-394, -396, -398 & -400
NAVY PIER, CHICAGO, ILL.**

See South Bend Turret Lathe, Toolroom Lathes, Drill Presses, Bench Shaper and Automotive Service Accessories and Tools demonstrated.



New 14" Drill Press
Precision-built, ruggedly constructed. Bench model with 60 cycle, 115 volt, A.C. motor. Price—f.o.b. factory **\$129.30**
Floor Model . . . **\$144.30**



SOUTH BEND LATHE WORKS

Building Better Tools Since 1906 • 450 E. MADISON ST., SOUTH BEND 22, INDIANA

New Literature

Continued from page 152

For Information Use Coupon on Page 62

C-6 The Aro Equipment Corp.,
Bryan, Ohio.

A 48-page catalog covering all Aro Lubrication equipment.

C-7 Sunnen Products Co., St. Louis, Mo.

Sunnen Automotive Catalog, containing data on all Sunnen automotive equipment and tools.

C-8 K-D Mfg. Company, Lancaster, Pa.

A catalog containing K-D automotive tools and service information.

C-9 Brunner Mfg. Co., Utica, N. Y.

Air compressor catalog covering Brunner's line of compressors and information and data about this equipment.

C-10 The Rubber Manufacturers Assn., New York City, N. Y.

A booklet entitled "How To Get Extra Service Out Of Automobile Tires," dealing with the various tire wear conditions.

C-11 South Bend Lathe Works, South Bend, Ind.

Catalog No. 12-D, containing information, prices, and illustrations on lathes, lathe attachments, accessories and tools; and drill presses and drill press accessories.

C-12 Bear Manufacturing Co., Rock Island, Ill.

Front end specifications for all makes of cars and trucks compiled on a chart. This specification chart is offered by the manufacturer free of charge.

C-13 E. F. Houghton & Co., Phila., Pa.

A new product index of Houghton products.

C-14 Eutectic Welding Alloys Corporation, New York, N. Y.

An eight-page bulletin announcing the latest low heat Eutectic welding alloys.

C-15 Inland Manufacturing Co., Omaha, Nebr.

A new catalog covering parts, supplies, and service tools for radiator repair shops.



Fig. 926
Pat. & Pats. Pending
Drawer is extra.

"Hallowell" Work Bench of Steel—with laminated wood top.

UNUSUAL

VERSATILITY



Fig. 732

"Hallowell" Work Bench of Steel — with drawer, lower shelf and end-pieces.



Fig. 847

"Hallowell" Work Bench of Steel — without end-pieces, drawer, or lower shelf.

HALLOWELL

READY-MADE WORK BENCHES OF STEEL

The serviceable, ready-made "Hallowell" Work Benches of Steel are ideal equipment for modern shops. "Hallowell" Benches have heavy, high-grade laminated wood tops, are also available with smooth, long-wearing steel tops—or steel tops covered with "Tempered Presd-wood". Made in 4 standard heights, 3 widths and 7 lengths, these "Hallowell" units can be used either individually or bolted together to form a continuous work bench—most any length—a money-saving feature not practicable with "nailed-together" wooden benches. The "Hallowell"—rigid as a rock—does not require costly bolting to the floor.

Write us for the name and address of your nearest "Hallowell" Industrial Distributor and your copy of the "Hallowell" Catalog.

OVER 45 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA.

BOX 561

CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

Personals

Everett G. McGill has been appointed manager of the organization and analysis department of the Packard Motor Car Company, it was announced today by Karl M. Greiner, vice-president and general sales manager. McGill was previously with Ford Motor Co., heading up advertising and sales promotion research activities in the marketing research division.

C. E. Gotshall has been appointed merchandise manager of Gillette tires division of United States Rubber Company, New York City, N. Y.

S. R. Zimmerman, Jr., has been named Director of Friction Material Research and Development for Raybestos-Manhattan, Inc. In his new capacity, Mr. Zimmerman will direct the Corporation's research and development activities on its Friction Materials at its

plants in Stratford, Conn., Manheim, Pa., Passaic, N. J. and North Charleston, S. C.

Hudson Sales Corporation, which recently announced four new United States Sales divisions to replace the six-divisional system formerly used, has appointed zone managers to head up the nine new zones established under the new four-division set-up. L. C. LaFrance will head up the new Boston zone; R. P. Best in Philadelphia; Carl M. Palmer in Cleveland; William J. St. Onge in Minneapolis; R. A. Sheasley in Pittsburgh; William G. Gaston in Dallas; Glen S. Potter in Kansas City; F. J. Lawson in San Francisco; and E. A. Jacquemart in Portland.

Herbert Herff, Memphis, Tenn. Ford Dealer, has been elected president of the Memphis Automobile Dealers Association.

Neil Moore has been appointed Director of Federal-Mogul Service division, Detroit, Mich. Formerly vice-president and general manager of Sealed Power, Muskegon, he will integrate operations between Federal-Mogul Service, the company's management and manufacturing operations.

Edmund J. Hogan has been appointed general sales manager of the West Coast Division of Willys-Overland Motors.

(Continued on page 156)

ANOTHER *National* LEADER

GARAGE TOOLS

FLARING AND CUTTING TOOL KIT



Compressor Attachment No. U162

- "C" Clamp type enables rapid application.
- Tough malleable iron casting offers a small, compact compressor w/o loss of strength.
- Extra large tip gives smooth, even flare.
- Sliding "T" Handle provides maximum pressure with minimum effort.
- Cadmium finish.



No. U170

Tools described in this advertisement are available as a kit, packed in an attractive steel box. Convenient and Compact, it protects tools from damage and loss; keeps complete tube servicing unit intact.



Flaring Die No. U162

- Handles seven sizes of tubing: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8".
- Tube holes threaded for sure grip on tubing.
- Die is hinged—one end opens for rapid application.
- Large flat wing nuts, 1 9/16" wide.
- Extension handle for clamping in vise.
- Cadmium finish.



Copper Tube Cutter No. U429

- Light, compact, streamlined.
- Capacity: 1/8" to 1".
- Large plastic knob handle.
- Recessed rollers for cutting tubing behind flared end.
- Highly polished, bright chrome finish.

When fractions of an inch really count, the recessed rollers on the Copper Tube Cutter prove invaluable. They allow cutting to be made as close to flared end of tubing as desired.

National Machine & Tool Co. Inc.

JACKSON, MICHIGAN, U. S. A.

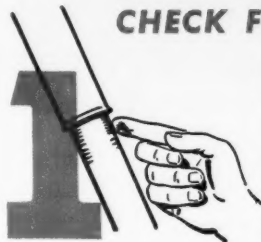


"Ha! Ha! Lookit 'em admiring my new car!"

This Quick, 2 Step Check

will put you in the
shock absorber business—in a big way!

CHECK FOR LEAKS



Run your finger around the shock absorber's lower cylinder. Any sign of oil is evidence of leakage. Leaking oil allows air pockets to form in the cylinder and results in faulty hydraulic control.

CHECK FOR AIR POCKETS



Detach the lower end of the shock from the axle. Push the cylinder all the way in and pull it out. You can easily feel air "pockets"—which are a sure sign the shock absorber has lost its effectiveness.

Three out of every four cars today need new shock absorbers. But not one motorist in a hundred knows it! YOU have to get down under the car, check the shocks—and *sell* your customers on the increased comfort and economy of new direct-acting shocks.

And when it comes to selling, your best bet is BRIGGS! First-quality Briggs Shock Absorbers give "the ride of your life" on

any road—in any weather. They are set and sealed at the factory—require no adjustments during installation, no servicing afterwards. Patented "Steel-Tite" construction and self-compensating seal are proof against leaks *for the life of the shock*.

Ask your jobber for Briggs Shock Absorbers—for all popular makes and models.
THE BRIGGS SHOCK ABSORBER CO. • CLEVELAND 3, OHIO

*"For the ride
of your life—
for the life
of your car"*

BRIGGS

SHOCK ABSORBERS



Personals

Continued from page 154

George A. Robertson has been appointed as General Sales Manager of Visilite Distributors, Saginaw, Michigan.

Leslie J. Woods has been elected Vice-President of the Industrial Division of the Philco Corporation. The Industrial Division handles the development and sale of

Philco automobile radios to the automotive industry.

George W. Wolff has been promoted to the position of Assistant Sales Manager of the Willard Storage Battery Company. A. L. Blackwell, formerly Cleveland district sales representative, has been promoted to succeed Mr. Wolff as national service manager.

Frank W. Doyle and Ralph W. Goetz have been promoted to positions of Assistant Sales Managers

of the Radiator Division of the Perfex Corporation, Milwaukee, Wis.

Barney Weingard has been appointed as West Coast representative of E. W. Twitchell, Inc., Phila., Pa. He has opened an office in Los Angeles.

Roland Whitehurst has been elected Vice-President in Charge of Sales of the Electric Storage



Battery Company, Philadelphia, Pa. Mr. Whitehurst has been in the employ of the Company for 40 years, starting his service with its New York Branch.

D. A. Hutchison has been named General Sales Manager of Sterling Tool Products Company. It was also announced that H. P. Gangwer, comptroller, has been named Vice-President of the Company.

C. M. Harrington, formerly Assistant Sales Manager of the Anderson Company, has been appointed Sales Manager of Linmar Products Corporation, Chicago, Ill.

(Continued on page 158)

"...and use VIXENS for speed—

—they're faster-cutting files!"

ONLY HELLER MAKES VIXENS

Vixen Files have been serving auto body and fender shops for years. Widely imitated, they have never been equalled. Specify genuine Vixens—made only by Heller—when you order from your jobber.

HELLER BROTHERS COMPANY
Newark, N. J. Newcomerstown, Ohio

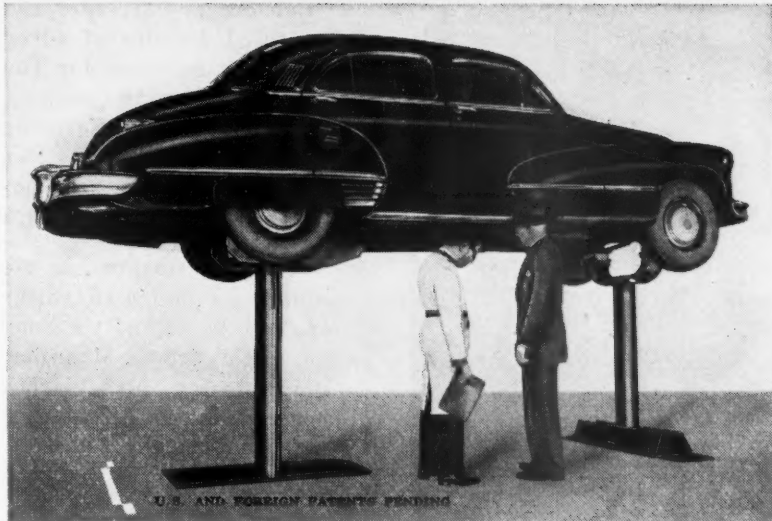
America's Oldest File Manufacturers

GENUINE HELLER VIXEN MILLED CURVED-TOOTH FILES



"I'm sorry dear, so sorry dear. . ."

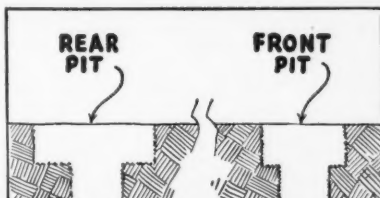
COAST to COAST it's GLOBE 2-Post



SO MUCH MORE IN SERVICE, VALUE

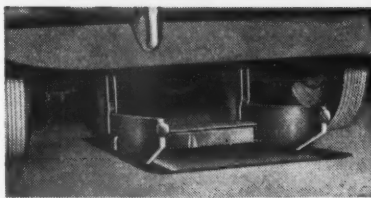
Everywhere from small shops where one Globe 2-Post Hoist is used to large car dealer establishments using batteries of thirty or more, Globe Hoist users are turning out thirty to fifty percent more service volume and increasing profits with this versatile hoist.

SEE THESE GLOBE-PIONEERED FEATURES...



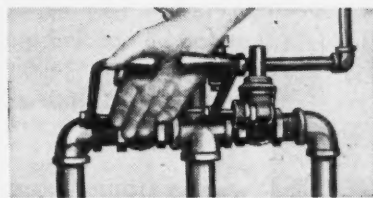
LESS COST TO INSTALL

Simplified design. Fixed position cylinders . . . less excavating.



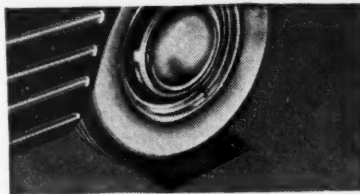
SMOOTH FLOOR

Slot-recessed blade rails. Automatic slot cover doors if desired.



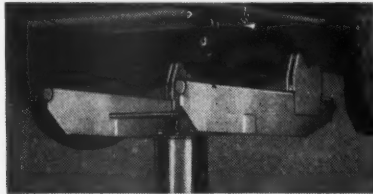
BETTER CONTROL

Positive, rigid pipe connections to BOTH cylinders.



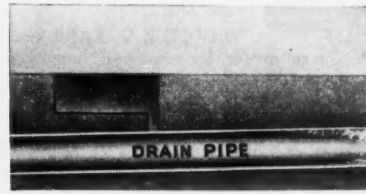
INSTANT SPOTTING

No inconvenient sliding mechanisms to obstruct floor area.



REVERSIBLE

May be used front or rear, interchangeably.



NO DEEP PITS . . .

Connects with your drain. No pumps or deep pits required.

GLOBE *Auto* HOIST

THE "BEST" LIFT . . . SAFER, SMOOTHER, QUICKER

GLOBE HOIST COMPANY • Philadelphia 18, Pa. • Des Moines 6, Iowa

In Automotive Lifts from Coast to Coast it's Globe "The Best Lift"—Single, Four and Two Post

America's Most Complete Line of Hydraulic and Electric Lifts . . . Automobile, Bus, Truck, Double-Duty, Industrial

Personals

Continued from page 156

Don McKim, recently Executive Secretary of the National Standard Parts Association, is the new General Sales Manager of F & B Mfg. Co., Chicago, Ill., manufacturers of Filko ignition parts.

George W. Pontius has been appointed Manager of Automotive

Engineering at the Bendix Products Division, the South Bend plant of the Bendix Aviation Corporation. Mr. Pontius has been connected with Bendix in engineering capacities for the past seventeen years.

Arthur Styron, former Southern Division Manager of Thermoid Company, has been appointed Manager of the Replacement Sales Division. He succeeds **Fred Beecher** who retired recently.


J. E. Trainer, Vice-President in charge of production for The Firestone Tire and Rubber Company, is serving as chairman of the committee on engineering for President Truman's conference on Industrial Safety.

Joseph G. Howland was recently named as advertising and sales promotion manager for Motorola, Inc., Chicago, Ill. Mr. Howland has assumed his new duties in place of **Victor A. Irvine**, who has retired.

Lansing T. Carpenter has been appointed director of advertising and public relations for The Russell Manufacturing Company, Middletown, Conn. Mr. Carpenter was previously general assistant director of public relations for United States Rubber Company.

George A. Warlow has been appointed as Canadian sales manager of A. Schrader's Son Division of the Scovill Manufacturing Company, Inc. Mr. Warlow has been connected with the Canadian Schrader Company for more than nineteen years.

Walter C. Trautman has been appointed Chief Engineer of Racine Operations of Walker Manufacturing Company, Racine, Wisconsin, according to an announcement by **James S. Allan**, president of the company.



LET WARCO BRING YOU A BIG VOLUME OF SERVICE JOBS

THOUSANDS of service station owners have found the way to a bigger volume of business in the car servicing field through the Warco Line of Automotive Chemicals.

A small stock of Warco Products, at a modest investment, puts you in a position to take care of many regular service and emergency jobs—mostly jobs that can be handled quickly without losing time from your regular repair work.



WARCO MO-TUN-UP enables you to do a quick, thorough job, cleaning sticky valves, and removing hard carbon from cylinder walls.

WARCO LIQUID ENGINE WELD gives you the answer to cracked cylinder heads, water jackets and inner cylinder cracks.

WARCO RADIATOR FLUSH gets rid of rust particles, and scale. Restores clean circulation. Liquid form; in quart cans only.

WARCO K.O. KARB insures longer life and gives motor more power by removing gummy formations from valves. A dependable carbon preventive. In 8 oz. cans only.

OTHER WARCO PRODUCTS

WARCO Grade "A" Hydraulic Brake Fluid
WARCO Grade "A" Heavy Duty Brake Fluid
WARCO Shock Absorber Fluid No. 200
WARCO Knee Action and Shock Oil No. 100
WARCO Liquid Radiator Solder
WARCO Rub-A-Lube
WARCO Jack Oil
WARCO Gen. Purpose Oil
WARCO Penetrant
WARCO Windshield Cleaner
WARCO Gasket Cement
WARCO Replacement Universal Joint Boots

Remember, the Warco Line is a strictly quality line, priced to enable you to meet competition.

From your jobber. Write us for complete descriptive literature.

WARWICK LABORATORIES COMPANY
334-42 Cleveland St. Brooklyn, N. Y.

WARCO



"I'm on the waiting list for a new one."

**HERE
IT IS!**



**A LARGER
MORE POWERFUL**

Size 8U

**ROTARY ELECTRIC
IMPACTTOOL**

A REAL MULTI-PURPOSE TOOL

The new, larger, multi-purpose Impacttool, Size 8U is a big brother to the 4U and does everything—in a bigger way! Now you can run nuts up to $\frac{5}{8}$ " bolt size, drill up to $\frac{3}{8}$ ", tap up to $\frac{3}{4}$ ", drive screws up to $\frac{5}{8}$ ", drive and remove studs up to $\frac{5}{8}$ ", etc....all without any kick or twist to you!

The amazing performance of the Ingersoll-Rand electric Impacttool is hard to believe unless you see it in action—it saves up to 90% on nut running time—has full power in either direction—no motor burn-outs, motor continues to run even if spindle is stalled—it is the greatest labor-aiding, time-saving electric tool ever offered.

Start saving money now by calling your Ingersoll-Rand distributor for a demonstration of the electric tool everyone is talking about—the Impacttool.

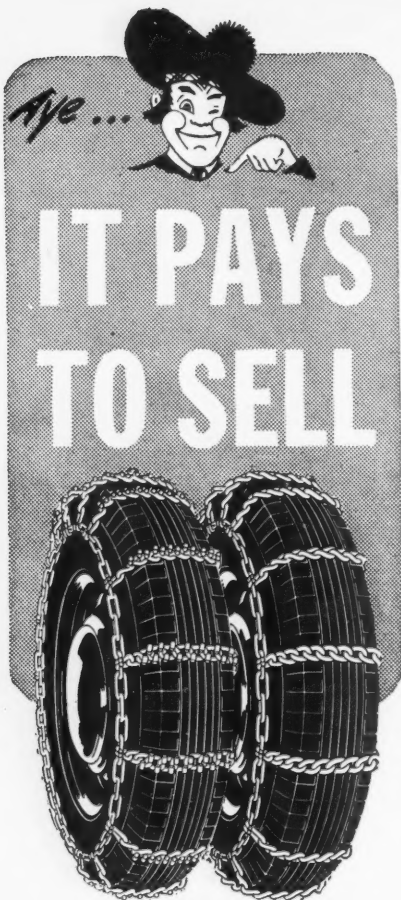
Both sizes are available for immediate delivery.

- Taps
- Runs Nuts
- Reams
- Drills
- Runs Hole Saws
- Drives and Removes Studs
- Drills Masonry
- Extracts Broken Studs
- Drives and Removes Screws
- Runs Wire Brushes
- Bores Wood

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

365-18



McKAY

Multi-Grip & Regular TIRE CHAINS

Sales-wise dealers build profitable volume by handling McKay Multi-Grip and Regular Tire Chains. That's because McKay Chains are the first choice of the careful buyers for dependable traction and longer wear.

There's plenty of "tire chain weather" ahead... so start NOW to sell fast-selling McKay Tire Chains, Cross-Chains and Accessories.

Easy to Put On • Hard to Wear Out



THE **McKAY** COMPANY

462 McKAY BUILDING

PITTSBURGH 22, PA.

Bendix Names Pontius

Engineering Head

George W. Pontius has been appointed Manager of Automotive Engineering at the Bendix Products division, the South Bend plant of the Bendix Aviation Corporation, according to an announcement by George E. Stoll, general manager of the division.

Pontius has been connected with Bendix in engineering capacities for the past seventeen years. During the greater part of this period he has been engaged in development engineering in various branches of the automotive field. He was responsible for the development of the Bendix Gun Turret and aircraft armament used on American and Allied aircraft during the war. He directed development of hydraulic power steering equipment for wartime use on heavy ordnance vehicles such as the tank retriever and armored cars. Since then, this power steering equipment has been adapted to civilian vehicles.

His new assignment includes co-



ordination of the engineering of the following products groups: Bendix Brakes for trucks and passenger cars; B-K Vacuum Power Devices, including Hydrovac vacuum power braking for trucks and buses; Bendix - Weiss Universal Joint; New Devices Section.



**ready for use without
fumbling or waste...**

It's still in the package, still protected, still rolled... but it's ready for instant use! Just pull the required amount of either brass or steel out of the package slot and snip it off. You're ready for the job!

No fumbling or spoilage with long strips or sheets of easily damaged thin gauge stock. No problem of protecting your supply between jobs. Gauge plainly marked on container... no miking.

Gauges Available in Dispensing Cartons

6" x 100" rolls			
.001	.003	.006	.009
.0015	.004	.007	.010
.002	.005	.008	.012

Heavier gauges, .015, .020, .025 and .032", are packed in envelopes containing four flat strips, each 6" x 25". Laminum (Reg. U. S. Pat. Off.), the laminated stock that simply p-e-e-l-s off to adjust the gauge, is sold in strips, 2" x 9".



Ask your automotive or industrial distributor about Laminated Shim's precision, packaged materials. He has special assortments, conveniently packaged to meet your special needs.

LAMINATED SHIM COMPANY

INCORPORATED

GLENBROOK, CONNECTICUT

TRADE MARK **Smash-Proof**

No. 888
TRADE MARK

CREEPER CASTERS

Precision Powdered
Iron Wheel

Top Plates
.095 inches Thick

Hardened
Ball Bearings

New Improved
Thread Guard

Heavy Spanner
Bushing

Permanently
Lubricated Axle

*See that
flat wheel?*

**There's a
reason for it!**

*Mechanics do not sleep on
creepers as some people suppose.*

THEY WORK! Since all of their
work requires pulling, pushing or lifting
it is essential for their creepers to **STAY PUT
WHILE THEY WORK.** That is why we use flat tread
wheels; they offer resistance to turns thus **PREVENTING
INJURY AND SPEEDING UP THE WORK.**

*There are plenty of convenient hand-holds to assist in going and
coming from under cars so creeper casters should swivel **HARDER** than
other casters. You can't **WORK** on a roller-coaster.*

A CREEPER WHICH CAN BE USED IS WORTH A DOZEN LAID UP FOR CASTER REPAIRS!

SOLD BY ALL LEADING AUTOMOTIVE JOBBERS

HULBERT MANUFACTURING CO. - - Ashtabula, Ohio

Obstructions are laffs for Hingeraffes!



...and all the rest of his big tribe of socket wrench handles and attachments—designed to turn nuts quickly and easily in hard-to-get-at places. As knuckle-savers, they're worth their weight in skin; as time-savers, they're money in your pocket. They are made in five drive sizes—from midget $\frac{1}{8}$ " to rugged 1"—to meet all requirements. You owe it to yourself to buy these tough, long-lasting attachments from your dealer. He's sure to have the ones you want because

**Tools you need...
we make!**



Write for catalog to
2226Y SANTA FE AVE.
LOS ANGELES 54, CAL.

4887

PROTO TOOLS
First in Quality
MFD. IN U.S.A. BY
PLUMB TOOL CO.

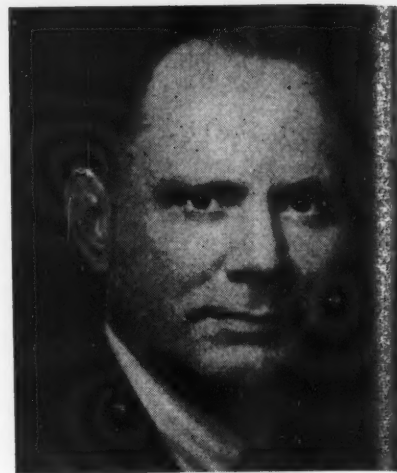
PROTO—Trade-mark reg. U. S. Pat. Off.

NAPA Increases Advertising For Coming Year

Starting in February, 1949, the National Automotive Parts Association will carry the story of NAPA and NAPA service to the motor vehicle owners of the nation through a national magazine advertising program. At the same time, NAPA's program in automotive trade publications will be continued.

In a recent statement issued to NAPA Franchise Jobbers, Henry Lansdale, vice-president and general manager of NAPA, expressed the belief that the broadened advertising program would provide unparalleled advantages for every jobber and repairman handling parts bearing the NAPA Seal. In extending the NAPA advertising program to include national magazine advertising, Mr. Lansdale said the organization is following a long-range plan.

Each advertisement will emphasize the quality of parts bearing the NAPA Seal, and the way in which NAPA warehouses and more than



J. R. Scott, Committee Chairman.

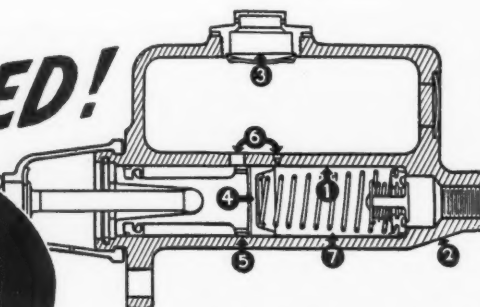
2,000 jobbers makes it easy for repairmen everywhere to obtain the finest parts for cars and trucks of all makes and all ages.

To tie in with the advertising program, NAPA is making available to NAPA jobbers and their customers a wide range of promotional and display material.

Members of the NAPA Advertising Committee responsible for the
(Continued on page 168)

NEW! IMPROVED!

SUPCO Long Life MASTER CYLINDERS



- 1—Super finished bore. Bearingized for surface hardness and improved grain structure.
- 2—Casting of special fine grain cylinder iron capable of withstanding great interior pressures.
- 3—New improved splash guard.
- 4—Oversize cups for better seal and longer life.
- 5—Piston accurately ground to assure perfect fit and long life.
- 6—Location of port holes to zero accuracy.
- 7—Every cylinder pressure-tested after assembly, simulating maximum working conditions.

YOU'LL do your customer a good turn—and also yourself—when you replace old master cylinders with this new Supco unit. It's the tops for efficient performance and long life. That means insurance of satisfactory service for your customers—and "reputation insurance" for you! Note these technical features that distinguish Supco Master Cylinders from conventional types:

See your jobber today. Write us for catalog just off the press.



Supco Sam says:

**IT'S THE HIT OF
THE YEAR IN
BRAKE SERVICE**

SUPCO PRODUCTS CORP.
123 W. 64th St., New York

The
"Quality" Line



BRAKE PARTS • BRAKE FLUID • BRAKE CABLES • BRAKE TOOLS

CAR BY CAR

EVERY



Ford



OWNER

IS A CUSTOMER FOR THIS NEW "BY-CAR" FUSE SERVICE



Where sales demand, Littelfuse CAR BY CAR assortment can also be purchased twenty packages to a box. One box—all for Ford; one box—all for Chevrolet; or one box—all for Plymouth. A MUST FOR CAR DEALERS.

The "Big 3" CAR BY CAR assortment of 20 packages of 5 required fuses each, is available in the following breakdown: 7 packages for Ford, 7 packages for Chevrolet, and 6 packages for Plymouth. HOT FOR SERVICE STATIONS!

• **NEW "BY-CAR" FUSE SERVICE . . .** With the new LITTELFUSE packaging idea, every car a market now!

• **NEW SALES . . .** You can sell a set to every one of your Chevrolet—Ford—Plymouth customers before it becomes an emergency.

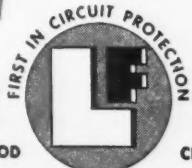
• **NEW KNOW-HOW . . .** Here's how: LITTELFUSE—and LITTELFUSE alone—is packaging every fuse used in a Chevrolet in one package! The same for Ford and Plymouth.

• **NEW TURN-OVER . . .** you sell the whole set instead of just one—and sell it the next time the car comes in—not just when they come in with a fuse blown!

• **NEW CONVENIENCE . . .** Each package of five is printed with a fuse application chart for the car the fuses service. It's sensational. Nothing like it for service convenience and **INCREASED SALES!**

LITTELFUSE

4785 NORTH RAVENSWOOD



Incorporated

CHICAGO 40, ILLINOIS

NITE-T-LITE • SWITCH-LITE • IGNITION-FRITZ • NEON INDICATORS • SWITCHES • CIRCUIT BREAKERS • FUSES, MOUNTINGS & ACCESSORIES



COLE-HERSEE CO.
Boston Mass.

welcomes you

to
Booths B-294-296
A.S.I. SHOW Dec. 6-10, Navy Pier, Chicago



COLE-HERSEE CO.

20 Old Colony Ave., Boston 27, Mass.

MANUFACTURERS OF

Headlamp Switches
Starter Switches
Heater Switches
Panel Switches
Trailer Connectors

Plugs & Sockets
Toggle Switches
Push Pull Switches
Line Connectors
Foglight Switches

Door Switches
Fuse & Junction Blocks
Pilot Lights
Ignition Lock Switches
Accessories



Announcing THE EIS Super "50" HEAVY DUTY BRAKE FLUID

FOR use in trucks, buses and cars under extreme weather and operating conditions.

- Meets or exceeds SAE heavy duty specifications and U. S. Army Specification 2-111B.
- Boiling Point over 300°F at Atmospheric pressure.
- Will flow at 60°F below Zero.
- Preserves and protects the rubber parts.
- Non-corrosive. Non-evaporating.

For dependable performance under normal driving conditions recommend EIS Super "40".



Be sure to see these and other EIS Quality Products at the ASI Show
Booths D27-29-31-33



Complete Master Cylinder Assemblies
Sealed Master & Wheel Cylinder Kits
Improved Wheel Cylinder Cup for Chrysler-built Cars

THE EIS AUTOMOTIVE CORP.
MIDDLETOWN, CONN.

Clearing House

Continued from page 52

trouble is that when you slow down and then step on the gas the motor jerks. That is, it seems to take hold for a short time then it dies down, then it takes hold again. When it gets up to about 30 miles per hour it seems to run all right. I had a new distributor put on, also checked over the entire carburetor, had a new fuel pump put on. Sometimes when you pull the choke out a little way, when you step on the gas it seems to help. Now sometimes when you step on the gas she takes off all right, while sometimes you have to even shift into a lower gear to get up enough speed. It may seem funny but she seems to run poorer at night than during the day, although I don't see why it should make any difference. Before I had the motor overhauled it didn't jerk like that. If I pull out the choke when stepping on the gas, it gives it more pickup. I have had the compression checked and it is O.K. Have also had new wires put on spark plugs and have had plugs cleaned and gapped. I hope I have explained this fully enough and hope you can help me. E. Olson, Route 1, Alma Center, Wisconsin.

REGARDING your 1937-60 Ford that dies on the pickup. I would say the trouble is in the carburetor. I would suggest replacing the two high speed jets with the jets from an 85 hp carburetor. This will give you more gas but will not effect your gas mileage to any extent.



"Don't you think you've had enough, Mr. Jones?"

THE MOST POWERFUL SANDER IN THE WORLD IN ITS PRICE CLASS

**MODEL HSHD7
HIGH SPEED
HEAVY DUTY
SANDER**



FOR PRODUCTION AND MAINTENANCE . . . amply powered for metal finishing, removing scale and rust with wire brush and for smoothing welds and casting ridges with cup grinding wheel.

Improved straight line ventilation; commutator protected against dust and abrasives; new high speed, 5,000 rpm; perfect handling balance; weighs only 12½ lbs. because of die cast drum; and other features. U. S. 3-in-1 flexible rubber pad adapts sander to curved or flat surfaces. Overall length, 15⅜".

FASTER CUTTING . . . MORE ACTION . . . HIGH LOAD SPEED SAVES SANDING DISCS . . . MOST ECONOMICAL . . . MOST EFFICIENT.

IN STOCK AT YOUR JOBBER'S

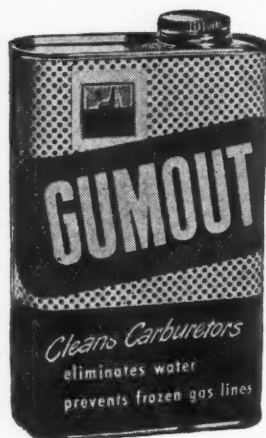
Glad to have you call on us at ASI in Chicago
Locations No. A-173, A-175, A-177, A-179



The UNITED STATES ELECTRICAL TOOL Co.
CINCINNATI, OHIO

5

Big Reasons Why it will pay you to sell GUMOUT



Gumout is today's sales sensation. Motorists everywhere are asking for the polka-dot can which assures more engine pep and power, easier starting . . . a clean fuel system.

Jump on the profit band wagon today! Here are five reasons why you should sell Gumout.

- **Generous discount schedule**
- **Unlimited market** . . . every car, truck, bus, plane, tractor, boat . . .
- **Easy to sell**—nationally advertised
- **Sure buyer satisfaction**—customers immediately note their cars' improved performance
- **Repeat business**—94% of those who buy become regular users

Ask your jobber for full details. Or write to:

PENNSYLVANIA REFINING CO.
2687 Lisbon Road, Cleveland 4, O.
Butler, Pa. Edgewater, N. J.

Manufacturer of famous Penn Drake lubricants.

New Dodge Truck Features Fluid Drive, Two Rear Axles

Continued from page 66

partially filled with a special fluid. The front member is connected directly to the engine crankshaft, while the rear member is connected to the clutch.

When the engine is idling with the vehicle in gear and the clutch engaged, the front or driving member agitates the fluid lazily, with insufficient turbulence to drive the vehicle. However, when engine speed is increased, the fluid is thrown with greater force against the paddles of the driven member which drives the vehicle. Advantages claimed for fluid drive on a truck of this type are smoother starting, flexibility in traffic and on grades, and less clutch wear.

Low floor and step heights, inside headroom of 76 inches, inside width of 72 inches, large door openings, and a windshield with 1870 square inches of vision all have been made possible by a new chassis design.

Lowering of the floor some 10 inches closer to the pavement than is possible on other vehicles was made possible by the Dodge-designed rear driving axle. The unique driving axle operates separately from the load-supporting rear axle.

Sole function of the driving axle is to drive the wheels. It consists of a differential assembly, connected to the wheels by open type axle shafts and universal joints. The differential assembly is mounted in rubber on the chassis frame, and moves up and down with the frame and body—not with the wheels, as on conventional trucks.

The length and angularity of the axle shafts change with the deflection of the springs. The two axle shafts "telescope" to compensate for loads, and two universal joints on each provide for changes in angularity.

The offset engine on the right side permits use of front-end space which formerly was wasted. Gas, oil and water intakes, and oil level indicator are accessible by raising the front hood. The engine hood inside the body is lifted for motor service and adjustments.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946

Of MOTOR AGE, published monthly at Philadelphia 39, Pa., for October, 1948.

State of Pennsylvania } ss.
County of Philadelphia }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared G. C. Buzby, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the MOTOR AGE and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semi-weekly or tri-weekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Chilton Company, Chestnut and 56th Sts., Philadelphia 39, Pa.; Editor, Frank P. Tighe, 1017 Drexel Avenue, Drexel Hill, Pa.; Managing Editor, Charles M. Kenyon, 600 Pine St., Royersford, Pa.; Business Manager, G. C. Buzby, East Sunset Ave., Chestnut Hill, Philadelphia 18, Pa.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Chilton Company, Chestnut and 56th Sts., Philadelphia 39, Pa.

Holders of more than 1% of the capital stock outstanding of Chilton Company: Estate of C. A. Musselman, 260 Sycamore Avenue, Merion Station, Pa.—Beneficiaries: Mabel M. Musselman, Mary M. Acton, David Acton; Charlotte M. Terhune, 160 E. 48th Street, New York, N. Y.; C. S. Baur, Thomas Jefferson Apts. No. B-51, 69-11 Yellowstone Blvd., Forest Hills, New York; Mrs. Beulah Fahrendorf, 59 Drake Road, Scarsdale, N. Y.; Mary M. Acton, 260 Sycamore Ave., Merion Station, Pa.; Mabel M. Musselman, 260 Sycamore Ave., Merion Station, Pa.; Dorothy S. Johnson, 1115 Fifth Ave., New York, N. Y.; Ann E. Tomlinson, c/o Bankers Trust Company, P. O. Box 704 Church Street Annex, New York, N. Y.; Ethel G. Breen, Trustee u-w of Charles W. Anderson, Old Greenwich, Conn.—Beneficiaries: Robert C. Anderson, Percival E. Anderson, Charles W. Anderson, Jr., Annie L. Clark; John Blair Moffett, 1608 Walnut Street, Philadelphia, Pa.—Agent for J. Howard Pew, J. N. Pew, Jr., Mabel P. Myrin, Mary Ethel Pew; Elizabeth J. Bailey and Ellwood B. Chapman, Trustees Estate of James Artman, Deceased, 930 Real Estate Trust Building, Phila., Pa.—Beneficiaries: Franklin Artman, Vera Waters, Alvin C. Artman, Elizabeth J. Artman, Marion A. Pratt, George H. Pratt, by assignment, Edwin Moll, by assignment; Frederick S. Sly, 140-40 35th Ave., Flushing, L. I., N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is . . . (This information is required from daily, weekly, semi-weekly, and tri-weekly newspapers only.)

G. C. BUZBY, Pres. & Bus. Mgr.

Sworn to and subscribed before me this 17th day of September, 1948.

PHILIP J. SHIRE, JR.
(My commission expires January 7, 1951).
[SEAL.]

Here's the
**PERFECT SERVICE
COMBINATION!**

1 WHITAKER "707" SPARK PLUG CABLE

"707" brings you greater efficiency in a heavy duty, neoprene insulated spark plug cable. It's a superior 7 copper strand, 7 mm. cable that withstands heat, cold, moisture, corona, grease, oil and much greater frictional wear. Its heavy neoprene insulation assures full delivery of power under the most severe conditions.

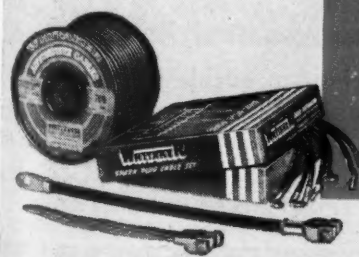


2 WHITAKER "FLASH-WELD" BATTERY CABLE

The only perfect terminal-to-cable connection. No solder . . . no pressure . . . no crimping . . . but a terrific high amperage electric weld fuses cable and terminal into one solid conductor. Found in no other make of cable . . . an exclusive Whitaker feature. Sold through leading jobbers everywhere.

**WHITAKER LABEL
ASSURES
QUALITY CABLE**

U. S. PAT. NO.
2422-380



WHITAKER

CABLE CORPORATION

Pioneers and Leaders in Automotive Cable Products Since 1920

KANSAS CITY, MO.
ST. JOSEPH, MO.
PHILADELPHIA
LOS ANGELES

When in DETROIT

Stop at Hotel Wolverine. Centrally located on Elizabeth Street, a block east of Woodward, overlooking Grand Circus Park. Five hundred rooms, each with tub and shower. Good food. Ample parking space—garage service. Home of THE TROPICS, most unusual night spot in Detroit.

HOTEL WOLVERINE
"The Goodwill Hotel"

RATES FROM
\$2.75 SINGLE • \$4 DOUBLE

CAMPBELL
Lug Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP

U.S. Pat. No. 2,093,547 — Canadian Pat. No. 223,568
INTERNATIONAL CHAIN & MFG. COMPANY
YORK, PENNSYLVANIA

When you call for
DURO CHROME
you're sure of getting

Doggone Good Tools!

DURO METAL PRODUCTS CO.
2649 N. Kildare Ave., Chicago 39, Ill.

Also Makers of DURO Machine Tools

A creeper which can be used is worth a dozen laid up for repairs, always insist on

Smash-Proof

See our Ad on page 161
HULBERT MFG. CO.

GET LONGER,
TROUBLE-FREE PERFORMANCE
with
Pedrick
precisioneered
PISTON RINGS
in guaranteed
ENGINEERED SETS
For every Car, Truck,
Bus and Tractor

NAPA Increases Advertising (Continued from page 162)

development of the program are: John R. Scott, NAPA New York Warehouse, chairman; Fred J. Kelly, American Brakeblok Division; E. J. Muldoon, The New Britain Machine Company; Herbert H. Bigelow, NAPA Minneapolis Warehouse; Robert L. Turner, NAPA Atlanta Warehouse; H. W. Clough, Belden Manufacturing Company; William M. Stuart, The Martin-Senour Company; R. Z. Oswald, Monmouth Products Company; R. R. Talbott, Allied Motor Parts Company; Richard C. Colyear, Colyear Motor Sales Company; John M. Heffelfinger, Boozer-Test Management Service, and Howard A. Bradley, Jr., NAPA Philadelphia Warehouse, president of NAPA.

• RUGER •
Hydraulic
FLOOR CRANES
and Arbor Presses
RUGER EQUIPMENT CO., Inc.
2425 St. Clair Ave. P. O. Box 3821
Cleveland 14, Ohio Portland 8, Ore.

Complete
SPRING
SUSPENSION
PARTS

MOOG INDUSTRIES INC.
ST. LOUIS, MO.

KING 2.5

For Automobiles and Trucks
KING WHEEL WEIGHTS
designed to lie completely inside the perimeter of the rim...
FOR CONSTRUCTION ACCURACY AND FIT—for simple and profitable wheel balancing—
USE DE LUXE KING WEIGHTS
(die cast under pressure)
Regular, Narrow and Flat—Thin Models. Fit Properly on all rims.
See your Jobber or Write
THE OHIO WEIGHT CO.
CINCINNATI 29, OHIO

For greater undercoating **PROFITS...**
LOOK TO...

Write for a Davison Representative or authorized distributor to give you the full story.

fendix
THE AUTOMOBILE UNDERBODY PROTECTIVE COATING AND SOUND DEADENER

THE DAVISON CHEMICAL CORPORATION
BALTIMORE 3, MD.

WILLIAMS
SUPERBUNCHES • SUPERSOCKETS

J. H. Williams & Co., Buffalo 7, N. Y.
"The Wrench People"

SPINNING POWER

a Companion Product of Full-Spark Plugs
GLOBE-UNION INC.
MILWAUKEE 1, WIS.

GLOBE

The NEW Exide

The dependable battery that millions of car owners want.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

WHEN IT'S AN EXIDE... YOU START

FRENCHTOWN INSULATORS AID BLUE CROWN TO ANOTHER DOUBLE VICTORY

Blue Crown Spark Plug Co., Chicago, will use consumer magazines for the first time to feature testimonials by Mauri Rose and Bill Holland, first and second place winners in the Indianapolis Memorial Day 500-mile race in 1948 and 1947, driving the only cars equipped with Blue Crown plugs. Billboards, direct mail and point of sale will also be used.

From an item in Printers' Ink

and the
INSULATORS
were made by
FRENCHTOWN

FRENCHTOWN PORCELAIN CO.

Sales Office, 8 Muirhead Ave., Trenton, N. J.

Factory, Frenchtown, N. J.

"PERFECT" WIRE HOSE CLAMPS

The "Double-Grip" that cannot Slip

YES, sir, "Perfect" DOUBLE GRIP Hose Clamps actually DOUBLE-GRIP the hose. A permanently tight hold that cannot slip—because double pressure is applied.

Double Grip's rounded edges will not pinch or cut through the hose.



Tightening nut spot-welded. Never turns and is never lost. Cold forged, retains its thread. Long screw for easy tightening. Wire element is cadmium plated, rustproof.

Manufactured to original equipment specifications, as used on many of the most popular cars.

When prominently displayed this eye-catching merchandiser will sell many more Hose Clamps for you.

These attractive counter displays contain a well-balanced assortment of 25, 50 or 100 fast moving numbers, permitting you to profitably service the majority of cars and trucks on the road today.

See us at the
A S I SHOW
Booth No. D-364

PERFECT PARTS, INC.

55 Amsterdam Ave. New York 23, N. Y.

Automotive Advertisers Issue Handbook for Wholesalers

Continued from page 68

The meeting was attended by some 50 advertising and sales executives of leading manufacturers of automotive parts, tools, equipment, accessories and chemicals.

Especially cited at the meeting was evidence of the growing tendency of the wholesaler to do a planned advertising job, instead of doing "hit-or-miss" advertising, and his increasing use of newspapers, radio and direct mail.

In response to the increasing interest in advertising on the part of wholesalers, the Council approved plans and general layout for a revised edition of its "Advertising Handbook for Automotive Wholesalers." These plans were submitted by C. B. Riddick, Koppers Company, Inc., Piston Ring Div., who heads the Council's Handbook Committee.

Enjoy the BIGGEST PROFIT offered on any complete QUALITY CHEMICAL LINE

30 Famous Barton Items have won acceptance among better service shops!

14 Years of Specialized Leadership merit your confidence!

8 Current Top Sellers:

- **LIQUID STOPLEAK**—works well with all anti-freezes.
- **LIQUID RADIATOR CLEANER**—New—Handles toughest radiator jobs without reverse flushing.
- **RADIATOR CLEANER** (crystals)—years of popular trade acceptance.
- **GASOLINE and FUEL-OIL CONDITIONER**—prevents frozen gas lines—saves gas and oil.
- **SUPER BLOCK SEAL**—a guaranteed seal that holds explosion pressure.
- **SOLVITE**—For motor tune-up—easy starting.
- **RUST INHIBITOR**—eliminates and prevents rust in the cooling system.
- **HYDRAULIC BRAKE FLUID**—All season—properly blended for all systems.

DEALERS: Wire or write for prices! DISTRIBUTORS: Many choice state distributorships are open! Cash in NOW on the complete top-profit, top-quality chemical line.

BARTON PRODUCTS CO.

2765 St. Mary's Court, Chicago 47, Ill.

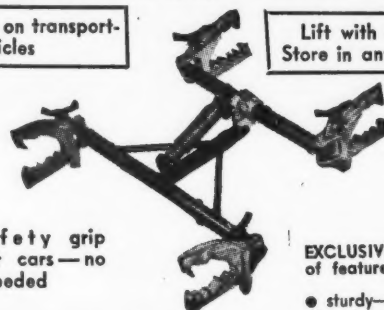
Barton

Tow 'em SAFELY . . . with ONE man . . .
without a big investment! Use the hydraulic

TOW-MASTER!

Save money on transporting new vehicles

Lift with one hand!
Store in any auto trunk!



4-point safety grip serves most cars—no adaptors needed

EXCLUSIVE combination of features

● sturdy—but lightweight due to aluminum cast jaws and alloy steel tubing

● no wrenches—hooks up in less than 5 minutes

● fits new cars and practically all models now on the road

● safety lock

● hydraulic shock absorber

● universal knuckle for smooth action on curves
U. S. Pat. No. 2439518

Only TOW-MASTER BUILDS BUSINESS THIS WAY FOR YOU

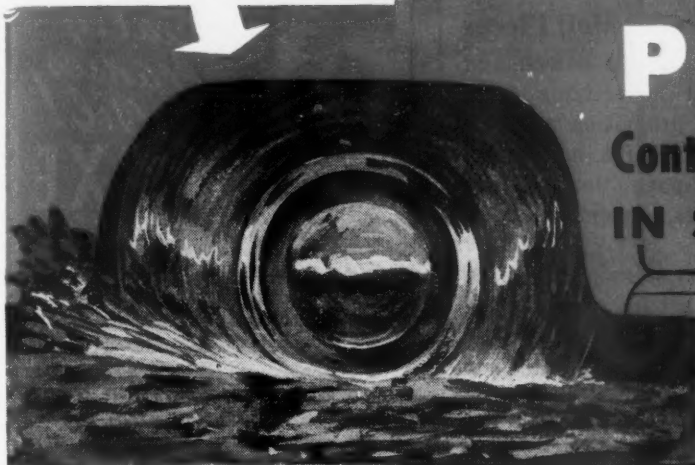
Show customers why YOU can make a SAFE tow . . . why your Tow-Master's exclusive features prevent damage and strain to their cars. They'll call YOU when service jobs are on tap. Protect yourself, too, by towing today's high-priced automobiles SAFELY. Four-jaw heavy-duty model, only \$66.75. (Three-jaw \$45.75.) Depend on Tow-Masters!

TOW-MASTER CORP.

Jobbers—Dealers—write for catalog on complete line

Dept. M 1111 N. Clark St. Chicago 10, Ill. Phone: Michigan 2-3322

**STOP THIS
SPINNING WHEEL
and the other wheel
will pull you out**



NO-STUK

A New

MICO

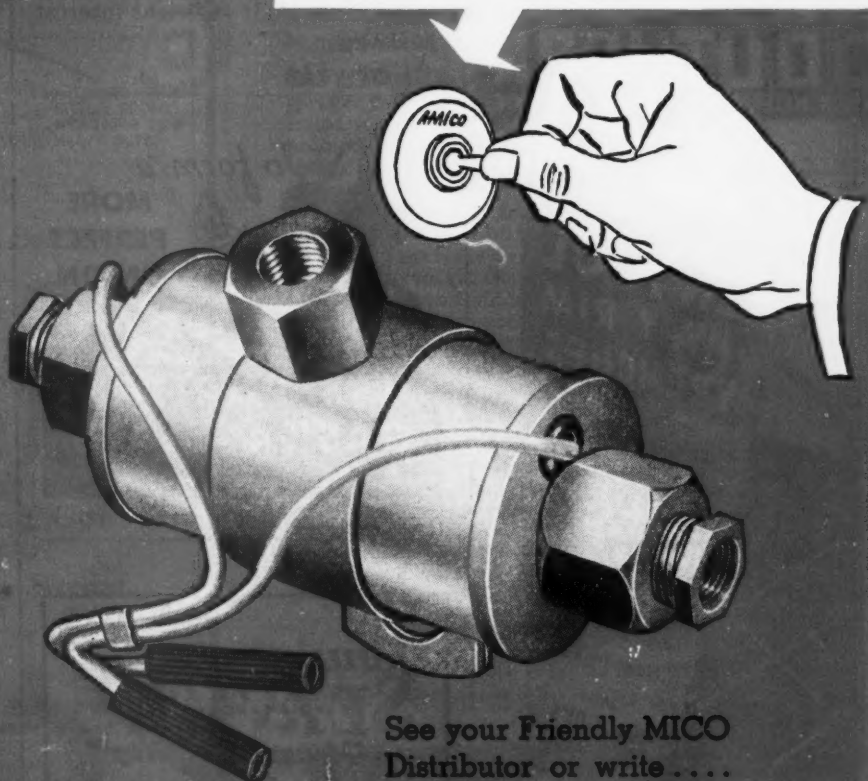
PRODUCT

**Control Traction—Get P-U-L-L
IN SNOW, SAND OR MUD!**

Apply the foot brake—NO-STUK holds the spinning wheel and out you go. Road tested and proven, the MICO NO-STUK prevents wheel spinning and permits traction that gets you rolling.

Electric Hydraulic—Installed in brake system

- ✓ Stops Wheel Spinning
- ✓ Starts Traction
- ✓ Reduces Need for Chains
- ✓ Eliminates Costly Towing
- ✓ Saves Tires and Chains
- ✓ Saves Time
- ✓ Maintains Schedules
- ✓ Saves on Tempers, too
- ✓ Costs Hardly Any More Than a Good Set of Chains
- ✓ Outlasts Three Cars or Trucks
- ✓ For All Cars, Trucks and Buses With Hydraulic Brakes!



See your Friendly MICO
Distributor or write

MINNESOTA AUTOMOTIVE, INC.

"Where braking power counts . . . count on MICO"

1328 HENNEPIN AVENUE

MINNEAPOLIS 3, MINNESOTA

Cal-Van
GARAGE TOOLS

2 and 3 FINGER TYPE

CARBON SCRAPER
LIGHT BULB PLIERS
RING COMPRESSORS
CREEPER CASTERS
BUSHING REMOVERS
REAMERS

GEAR PULLER

THREE-IN-ONE PULLER

WRITE FOR CATALOG

NO. 10 TIMING GEAR PULLER

Cal-Van
MACHINE PRODUCTS, INC.
JACKSON, MICHIGAN U.S.A.

**Write for this
"PROFIT-PROVER" PLAN**

Prove the money-making performance of the Milwaukee "No Nick" Fender Hammer in your own shop. Attach this coupon to your business letterhead for complete information on our "PROFIT-PROVER" Plan. Mail to Milwaukee Electric Tool Corporation, 5330 W. State St., Milwaukee 8, Wis.

CLUTCH FACINGS • RIVETS

HE, HE, WATCH ME BEAT CHARLOTTE

MY THANKSGIVING GOES TO SOUTHERN BRAKE LINING

HYDRAULIC BRAKE PARTS • BRAKE FLUID

SOUTHERN
FRICTION MATERIALS CO.-CHARLOTTE, N.C.

NSPA Offers Wholesalers

"Comic Book" Mail Pieces

Adapting one of the newest and most appealing advertising techniques to sales promotion material for wholesalers, NSPA now offers two 3-color, 12-page "comic book" direct mail pieces, to member wholesalers.

These booklets were prepared at the request of a number of wholesaler members for some type of effective advertising material that would combat current and forthcoming car factory and dealer promotion. More "comic books" on equally competitive themes will be made available if sufficient interest is shown.

MORE THAN STRAINS

Actually Cleanses Oil!

DELUXE
Oil Filters

MORE THAN FILTERS

DE LUXE PRODUCTS CORP., LA PORTE, IND.

EDISON

Batteries
Spark Plugs
Magnetos
Glow Plugs
Igniters
Connectors

THOMAS A. EDISON, Incorporated
Automotive Division
West Orange, N. J.

THE COMPLETE LINE
that
Completely Satisfies

Since 1906
The
Fitzgerald Mfg. Co.
Torrington, Connecticut

Fitzgerald
GASKETS

A creeper which can be used is worth a dozen laid up for repairs, always insist on

Smash-Proof

See our Ad on page 161
HULBERT MFG. CO.

Job Designed

KEN-TOOL
4-WAY RIM
WRENCHES

They're built stronger to last longer...forged from only the highest quality steel...held to KEN-TOOL'S rigid standards. They're "Job Designed" to do tough jobs quicker...Best by Test!

See KEN-TOOL'S Complete Line At Your Jobber!

The KEN-TOOL Mfg. Co.
Akron 5, Ohio

Largest Exclusive Manufacturers of Tire and Wheel Changing Tools

T-60 Standard Passenger
T-56 Heavy Duty Passenger
T-90 Light Truck
T-95 Extra Heavy Duty Truck Wrench With Hole for Leverage Bar

To form a
MORE
PERFECT
UNION!

**USE PURITAN
GASKA-SEALS**
No. 1, 2 and 3

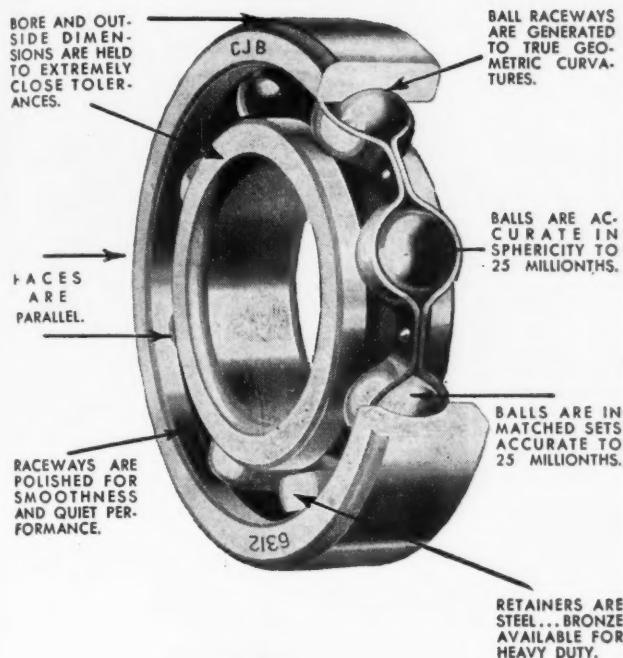
Genuine
SERVICE
INDIANAPOLIS
"Measurably Better"
SPRINGS

SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

HERE'S WHY—

CJB AHLBERG BALL BEARINGS

*Run Smoothly • Quietly
with Long Life*



CJB

Ahlberg Ball Bearings

are precision assemblies of these quality components, engineered and manufactured for top performance. Ahlberg Bearing Company, 3028 West 47th Street, Chicago 32, Illinois.

Visit the AHLBERG exhibit . . . Booths D-170, D-172 and D-174 A-S-I Show, Navy Pier, Chicago, December 6-10.

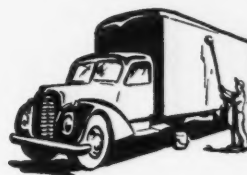
Ahlberg Bearings

CHICAGO

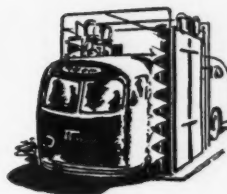
BALL BEARINGS • ROLLER BEARINGS • PILLOW BLOCKS

MOTOR AGE, November, 1948

**NOW—
wash
jobs
take**



**LESS
TIME**



**with
Oakite Composition No. 70**

Let Oakite Composition No. 70 do your dirty work. Save your muscle. No need to scrub, scrub, scrub. This made-for-the-job Oakite cleaner quickly takes off road grime, exhaust stains, oil films—without hurting paint, lacquer, decals!

EASY TO USE: All you do is spray or brush on a low concentrated solution of Oakite Composition No. 70. Allow for short soak; then rinse off manually or in mechanical brush-rinse rack. That's all. Thanks to free rinsability of this Oakite body shampoo, your surfaces dry down film-free, clean. No chamoising. No water spots on windows. For proof, arrange with your Oakite Technical Service Representative for a demonstration.

FREE GUIDE TO LOW COST CLEANING

FREE Oakite Automotive Cleaning Booklet tells you about body-washing; how to desludge and descale cooling systems; degrease parts in cold solution;—all with Oakite cleaners. Send for your free copy now.

**no need to
chamois.**

**soluble in
hard, cold
or hot water.**

**plenty of
dirt-lifting
suds.**

**effective at
low concentra-
tion.**

low cost.



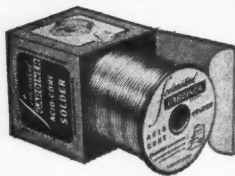
OAKITE PRODUCTS, INC., 24-C Thomas St., NEW YORK 6, N. Y.
Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE

REG. U. S. PAT. OFF.

Specialized Industrial Cleaning
MATERIALS • METHODS • SERVICE

Q. Need Solder? A. Buy GARDINER! BRAND



Solder the easy way—no fuss, no muss. Use Federated Gardiner Brand ACID CORE SOLDER... the flux is in the solder. For automotive and general work. Comes in all commercial sizes and quantities.

Federated
METALS DIVISION

AMERICAN SMELTING AND REFINING COMPANY
WHITING, INDIANA (CHICAGO)



WAR SURPLUS BARGAIN

CO₂ Ten Pounder

Get these brand new, ready-to-use latest type CO₂ 10 lb. capacity fire extinguishers for your maintenance facilities, or mount them on your vehicles and be sure of your fire protection! CO₂ is ideal extinguisher because it fights fires without mess—no damage to equipment or cargo. Instant discharge squeeze grip puts extinguisher into action in split seconds. Release handle and unit is shut off—no gas waste. Order your requirements today.

ACME
EQUIPMENT
CO., INC.

Present List approx.\$48.00
OUR PRICE\$36.50
PLUS ILL. SALES TAX F.O.B. CHICAGO
Write for our FREE Illustrated WAR
SURPLUS BARGAIN Circular
126 S. Clinton St., Rm. 206, Chicago 6

CHECK SPRING TENSION!

A PERFECT valve grinding job can't give efficient engine performance unless all valve springs function properly. Insure every motor overhaul job by checking spring tension with

RIMAC SPRING TESTER For VALVE and CLUTCH SPRINGS

Used in production and recommended for service work by leading manufacturers of automobile, airplane, truck and tractor motors.

RINCK-McILWAINE, INC.
16 Hudson Street, New York 13



Range up to
250 lbs.
PRICE
\$55

A BRAND NEW COUNTER DISPLAY TO BOOST SALES OF HULL AUTOMOBILE COMPASSES FREE TO HULL DEALERS

Designed to attract maximum attention, to display Hull quality compasses to best advantage—this new counter display is colorful, three-dimensional, a surefire sales booster. Furnishing live, new merchandising aids regularly to its dealers is just one of the many ways that Hull is WILLING and ABLE to stand back of its products... to maintain unchallenged leadership in the automobile compass field. Order now for peak Christmas sales.



HULL MFG. CO.
P. O. Box 246-MA-10, Warren, Ohio
Send me information and prices on the Hull Compasses.
NAME _____
Check: ☐ Dealer ☐ Chain Store ☐ Jobber
STREET _____
CITY _____ **STATE** _____

The Mark of Quality!

Whether they are the Original Equipment Valves on the tubes you sell and service or... whether you use them as Replacement Valves in your tire repair business, the Schrader Trade Mark on any Tire Valve you work with is a Guarantee of Quality!

When you see this Schrader mark molded on the base of any Tire Valve, you know it is guaranteed to give unsurpassed performance under all operating conditions.



A. SCHRADER'S SON • Brooklyn 17, New York
Division of Scovill Manufacturing Company, Incorporated

MORE JOBS...MORE PROFIT

with NALCO infra red dritherm Portable Units

Cuts drying time—eliminates paint job "bottlenecks." Here's what NALCO units can do for you—in 15 minutes!

- Entire fender jobs of synthetic enamel dried, ready for polishing.
- Putty glaze dried.
- Color coats dried hard for polishing.

NALCO units are available in pairs, groups or banks and for tunnels.

Write for your free copy of "Factory Methods in Your Shop."



NORTH AMERICAN
Electric Lamp Co.

1071 TYLER ST., ST. LOUIS, MO.



"Engineered for Results"



BURD PISTON RING CO. • ROCKFORD, ILLINOIS

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MODEL 125A WELDER
A Big Money Saver For Any Shop
 Only **\$69.50** F. O. B. Factory
Complete-Ready-To-Operate
SAVES TIME • REDUCES COSTS • INCREASES PROFITS!



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A. S. I. SHOW — BOOTH B222 - B-224
NAVY PIER, CHICAGO
 Dec. 6-10, 1948

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- Removes gas fumes at source (exhaust pipes)
- Simple installation—no change or alteration of existing facilities.
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Complete packaged kit
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\$187.50

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Illustration shows standard kit with two extra tube outlets.



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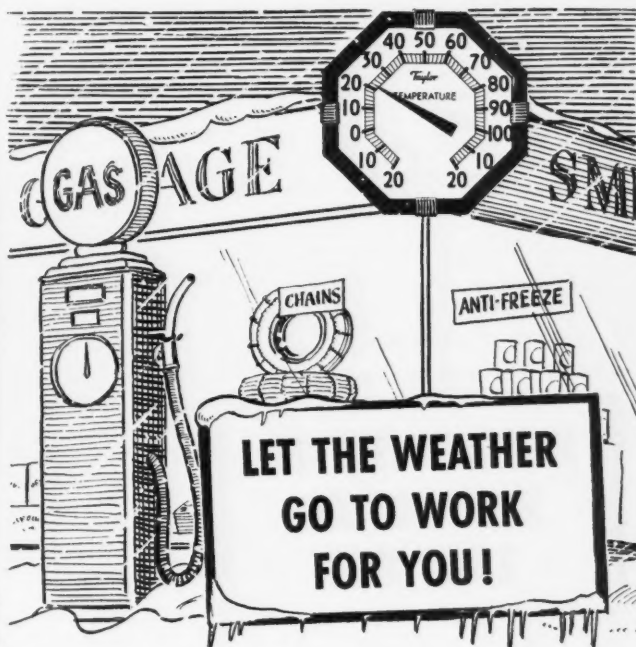
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NO HEATING NECESSARY

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Taylor Instruments Mean Accuracy First

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3 points that build good will on glass replacement jobs

It pays to show customers that you've used:

1

PLATE GLASS—for maximum freedom from distortion.

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SAFETY PLATE GLASS—two panes laminated with a sheet of clear, tough plastic.

3

L·O·F GLASS—a name that is recognized for top quality.

This mark is etched on every
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You do the job right when you use the complete Ramco Method ...so right that you can guarantee both rings and labor as Nationally Advertised ... for 10,000 MILES or ONE YEAR!

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*Be sure to ask him, also, about Ramco's NEW 3-Up PARTS CLEANER!



DOES MORE because of 8 POINT PISTON STABILIZATION

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Hang up this sign. Put the Profit Power of the Ramco Re-Powering Program to work for you.

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Backed by **POST** and **Colliers** this program sells first of all your Number One Engine Service, Restoring Compression with RAMCO 10-UP PISTON RINGS ... In addition, even though Ramco makes no products for them, Ramco Re-Powering Program promotes the 3 allied services which you render ...

2 CARBURETION

IGNITION

three

4 COOLING

RAMCO 10-up PISTON RINGS

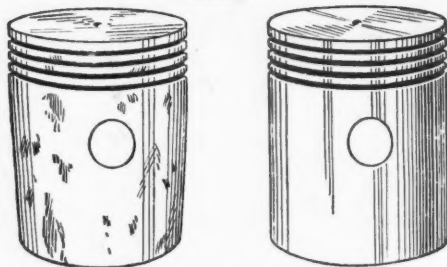
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... the 10,000 Mile (or one year) Guaranteed Rings for Re-Bore and Re-Ring, Car or Truck

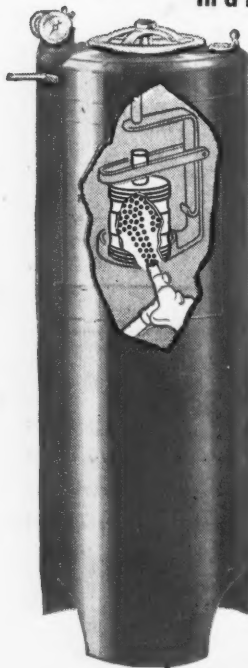
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can make collapsed pistons *better than new*
in a matter of minutes.



KOETHERIZING
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KOETHERIZING
resizes pistons perma-
nently!

KOETHERIZING
restores both cast iron
and aluminum pistons!

KOETHERIZING
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weak or brittle!

KOETHERIZING
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boss distortion or dis-
turb piston pin fit!

KOETHERIZING
doesn't add weight to
the piston!

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Koppers Company, Inc., Piston Ring Division,
Box 626, Baltimore 3, Maryland

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PULLED PISTON**

Koetherizing is an exclusive, patented process which expands pistons under precision control within tolerances of .001 inch. Proved over 10 years of service. Be sure to get the original, genuine Koetherizing.



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